MEDICAL RECORD

CHEVALIER JACKSON, M.D.
Eminent American Laryngologist
Symposium on Disorders of Ear, Nose and Throat, page 95

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Vol. 158, No. 2

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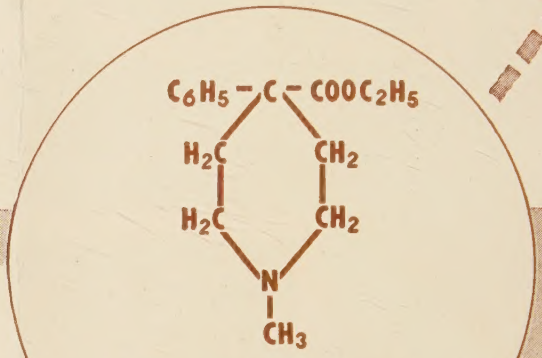

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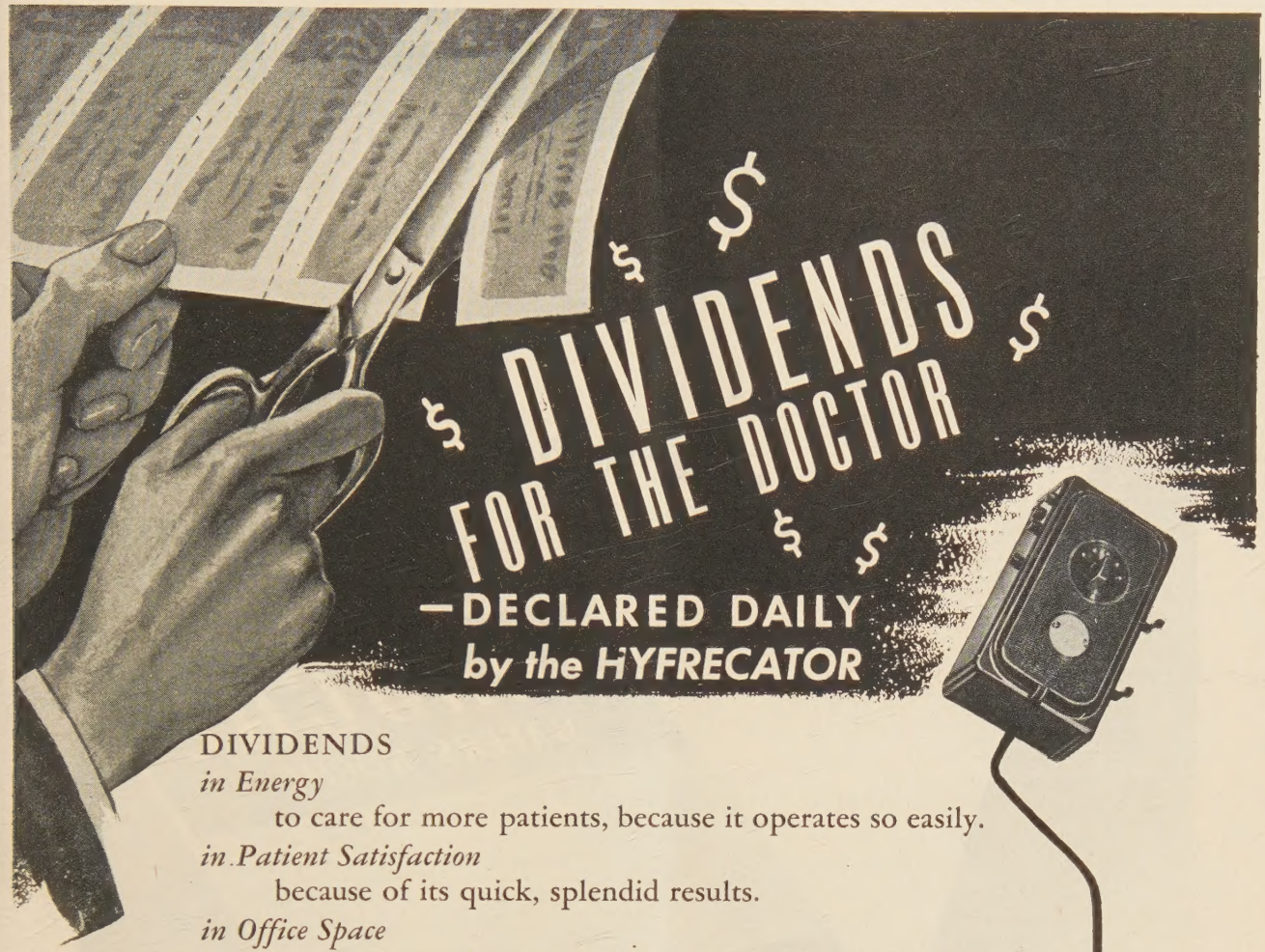

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The Doctor and the Horseless Carriage

New laurels are added to the scientific and humanitarian record of the American doctor—especially the country doctor—in a fascinating new book, *Combustion on Wheels*, by David L. Cohn (Houghton Mifflin), for it seems that the doctor, graduating from his horse and buggy into the horseless carriage, was among the first daring pioneers to set the automobile in a respectable niche in public opinion. It was the doctors, Mr. Cohn concludes, with their natural flair for science and mechanical contrivances who not only bought and used cars but repaired them themselves in days when skilled mechanics were rarer than veterinaries. What's more, they kept accurate records of costs and repairs which were invaluable to the automobile makers in improving their product.

"Doctors were the first large group to experiment seriously with the car as a practical vehicle, keep records of its costs and performances, and on the basis of these records, decide that the car had come to stay, when all-wise bankers still held that it was only a passing fad. The very fact that they approved of it, moreover, was one of the most convincing arguments that could be made in its favor. The reasons are clear.

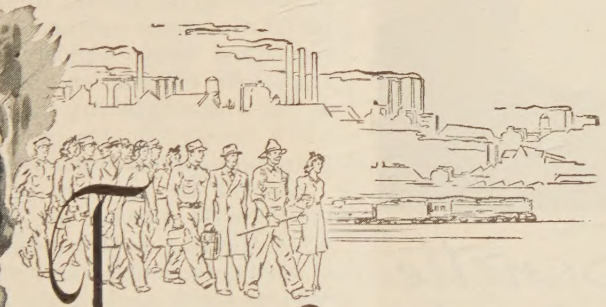
"Can you depend upon the car to get you there and back? Will it plow through mud and sand? Will it climb hills? Is it more expensive to maintain than a horse and buggy? Will it give you your money's worth? These practical questions were uppermost in the public mind in 1905 as it looked skeptically at the automobile, and until they were answered satisfactorily the car would remain a plaything of the rich. They were first reassuringly answered by the country doctor, and his words carried weight because he was by temperament cautious, conservative, and slow to adopt new methods, while the nature of his profession required him to put the automobile through the most rigorous tests. He, more than any other man in the community, had to go out in all kinds of weather on all kinds of roads. Others could afford to be late for an appointment; he could not, because the issue of life or death might devolve upon his promptness or tardiness."

He offers particular credit to Dr. F. M. Crain, who lived in Redfield, South Dakota, in 1905. Dr. Crain, disgusted with his balky car and the impotence of local mechanics, learned to "drive by ear", using his stethoscope and anatomical knowledge to diagnose the assorted gurgles, clanks and groans of the engine.

Dr. Charles Sylvester, of Dorchester, Mass., kept a careful record comparing his auto costs with the upkeep of his horse and carriage. He reported that after seven months the car cost him $159.75 against $268.10 for the horse and carriage. The automobile expense log included such items as "$5.25 for loss of eyeglasses while raising a thirty mile breeze in the woods" and "repair of a bicycle which ran into me, $2.50".

Dr. J. C. Stinson, living in San Francisco about the same period, became the victim of a "cannibal mechanic" and his repair bill for a single cylinder car which had cost $983, ran up to $566 for three months.

But while this sort of thing was going on, Mr. Cohn records that Henry Ford and his contemporaries in Detroit were almost ready to release the famous Model T. He and other present day auto makers acknowledge their debt to the country doctor for his pioneering use of the horseless carriage.



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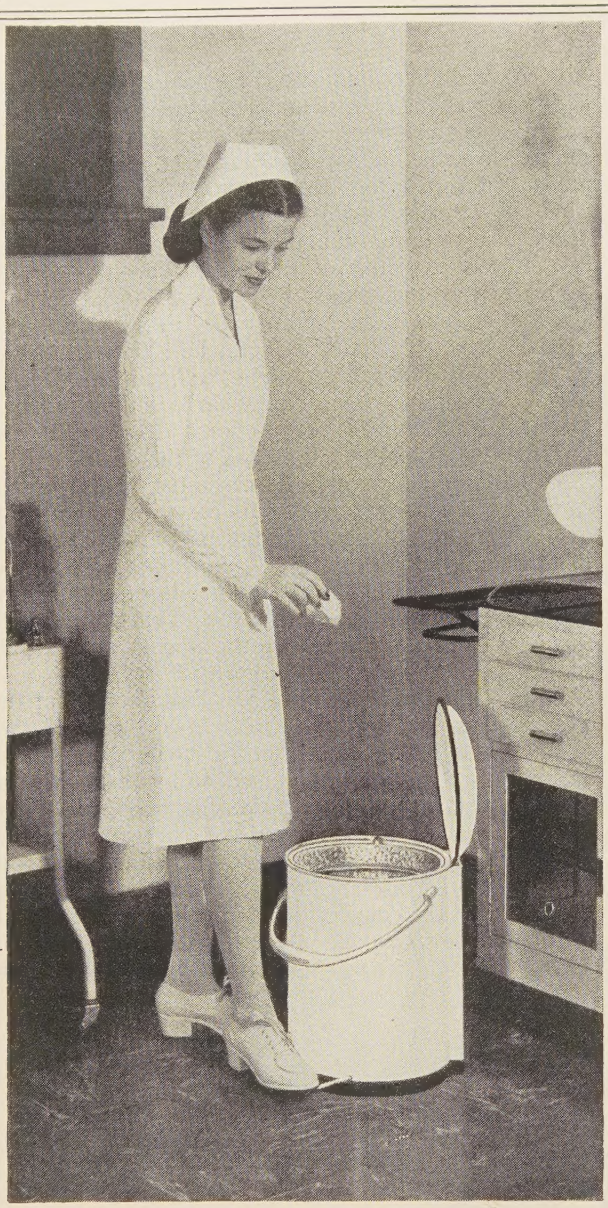

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Open Forum

Medical Pioneers in the Peruvian Amazon

MAJOR EDWARD A. WESTPHAL, M.D.
Chief of the U.S. Health and Sanitation Division in Peru

Beyond the lofty ranges of the Andes Mountains, in the upper reaches of South America's vast Amazon basin, is one of the largest great primitive frontiers of economic development in the Western Hemisphere. Here the second World War, with its insatiable demand for strategic materials, has given new impulse to regional development. In the forests and valleys sloping down to the Amazon lowlands are valuable resources of rubber, hardwoods, cinchona. Fertile stretches of land are adapted to tropical and semi-tropical agriculture. Oil has been discovered in this trans-Andean region. The Ganso Azul field south of Pucallpa, Peru, already is helping to supply the area's petroleum needs. The montaña region, as it is popularly called in Peru, is on its way up economically.

For centuries, while other areas of the Americas moved forward in economic development, the upper Amazon region remained almost untouched. On one side the towering Andes walled it from access to world markets by way of the Pacific. And between the montaña and the Atlantic lay more than two thousand miles of tropical jungle impenetrable to commerce except by navigation on the Amazon and its tributaries. Now the airplane has opened fast routes of communication. In addition, Peru is pushing penetration roads over the Andes. The spectacular Central Highway has been virtually completed from Lima to Pucallpa. Other penetration roads are under way or projected to the North and South. Agricultural experiment work proceeds with colonization. The pioneering settler finds in this Amazon country the promise of a new frontier which responds to the productivity of human labor, transportation and machinery.

And, in the vanguard of the pioneering work in the Peruvian Amazon, are doctors and sanitary engineers, applying modern medical techniques to the task of making the jungle country healthful and productive. Modern health work in the montaña region has been expanded greatly in the last two years, as part of inter-American cooperation in health and sanitation activity. Peruvian doctors and engineers are working with doctors and engineers from the United States to increase the productivity of the Amazon country and improve the jungle environment for human habitation.

Peru was one of the first of the other Americas to join with the United States in cooperative health and sanitation work recommended by the Rio de Janeiro conference of American foreign ministers in 1942. Health and sanitation measures in Peru's trans-Andean region were undertaken in recognition of the potential importance of the area in expanding hemisphere production of tropical-grown materials, such as quinine and rotenone, as well as in its potential long-range value to the development of Peruvian economic resources. Development work in the Peruvian Amazon, including the health and sanitation program, is Peru's counterpart of similar development being carried out in the huge Amazon basin by Brazil, Bolivia, Ecuador

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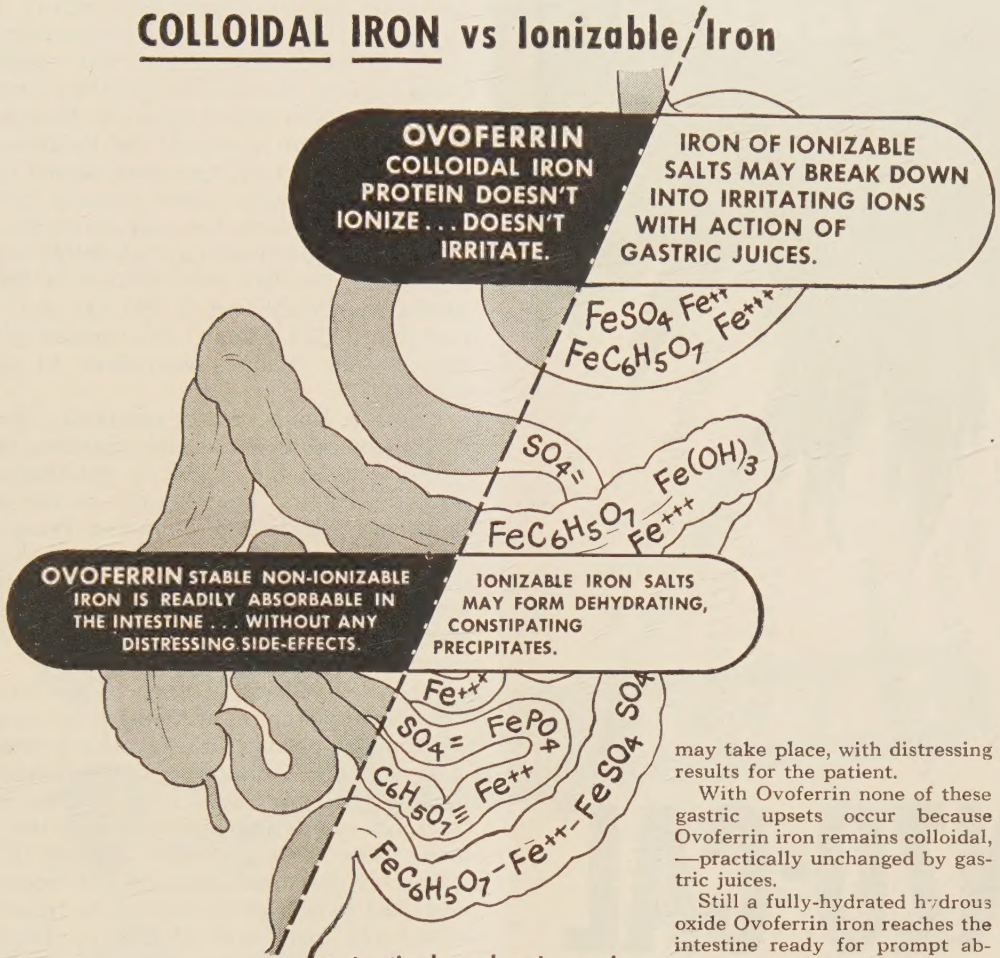

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and Colombia. In the health work, particularly, inter-American cooperation plays a timely rôle in aiding the development of hemisphere resources.

The health program in Peru, like that in most of the other eighteen countries participating in the inter-American health and sanitation activity, is carried on by a special cooperative service organized as an agency of the Peruvian Government. This special agency is known as the *Servicio Cooperativo Inter-Americano de Salud Publica,* better known in Peru as the SCISP. The SCISP is an agency of the Peruvian Ministry of Health. The original agreement, signed in July, 1942, called for a two-year health program costing $1,000,000. This agreement has been extended over a five-year period, involving total projected expenditure of $3,000,000. To date the Institute of Inter-American Affairs has contributed $1,850,000 and the Peruvian Government $672,000 in cash, together with personnel, services and facilities equivalent to an additional $200,000.

Fourteen United States specialists, mostly specialists in tropical medicine and engineers, have been assigned to assist the SCISP by the Institute of Inter-American Affairs. The majority of the personnel are Peruvians. Nearly eight hundred Peruvian nationals are at work at SCISP's projects and in the administrative forces. Of these about one hundred are professional personnel, including doctors, sanitary engineers, nurses, sanitary inspectors, nurses aides and laboratory technicians.

When SCISP was created, it was charged by the Peruvian Government with the tasks of planning, organizing and putting into operation a medical program in Peru's upper Amazon region. Certainly this was no small job. Despite considerable progress in opening air transport routes and highways over the Andes, communications were extremely difficult by comparison with more developed areas. SCISP doctors and engineers had to become accustomed to travel by foot and mule back, canoes and rafts on the rivers, in addition to airplane flights over unchartered jungles.

Still more troublesome was the problem of transporting materials and equipment for construction of hospitals and dispensaries. When SCISP began work in 1942, the Trans-Andean Highway to Pucallpa was incomplete. The submarine menace in the Carribean and the South Atlantic was at its height. Peru's biggest Amazon trading city, Iquitos, is about twelve hundred miles up the Amazon from the Atlantic. Ordinarily heavy materials and equipment move into the upper Amazon by way of the Amazon from the Atlantic. With shipping scarce, however, it was necessary to transport materials over the mountains to Tingo Maria or to the Aguaytia River from Lima, thence to Yurimaguas or Pucallpa on rafts and by river steamer to Iquitos. A shipment sent in this fashion took from three to six months to arrive and part of the goods were damaged or lost. In the construction of the Yurimaguas Hospital many materials were shipped down the rapid-filled Huallaga River from Tingo Maria. Nearly fifty percent of material shipped in this way was lost. Two raftsmen were drowned. But there was no other way of shipping at the time.

Now all materials are shipped by boat from Lima up the Pacific via the Panama Canal to Iquitos, a distance of ten thousand miles, and then from Iquitos

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they are reshipped on river steamers to their destination. During the dry season supplies can be sent over the Pucallpa road as far as Pucallpa, then by river boat to Iquitos. During the dry season, many sections of the rivers are not navigable.

The program of medical assistance and preventive medicine being carried out in the jungle was the result of preliminary surveys and conversations with the officials of the Ministry of Health. In agreement with them, the following program was devised:

1. The construction and operation of combined hospitals and centers of preventive medicine in the larger and more strategically located cities.
2. The establishment of medical dispensaries in the smaller towns and villages.
3. The establishment of sanitary posts in the smaller settlements where a dispensary under the care of a physician was not economically feasible.
4. Setting up of a system of mobile units to render the same services to the population sparsely settled along the highways and rivers.

The center of this work is the city of Iquitos, a product of the rubber boom of the last century and once again a flourishing city of fifty thousand inhabitants. The shipping and commercial center of the entire area, Iquitos is located on the Amazon River, just below the union of the Ucayali and Maranon Rivers. Here the SCISP is constructing an addition to a small and inadequate existing hospital. The addition, which is larger than the old hospital, will supply this institution with eighty-eight beds additional, and facilities for surgery, x ray work, laboratory work, out-patient department, administration building, and dining rooms. The SCISP also has been operating a general out-patient clinic for indigents in Iquitos where about four thousand patients are treated and supplied with medicine monthly.

The SCISP placed in operation in Iquitos a health-center in which emphasis is placed on preventive medicine work. This unit treats about three thousand persons monthly. By preventive medicine is meant the treatment of transmissible diseases, such as malaria, tuberculosis, syphilis and hookworm, and searching out, treating and following up cases to eliminate carriers. This work also includes vaccinating against childhood diseases, typhoid, yellow fever, etc.; orienting mothers in the care and feeding of infants and children; instructing pregnant mothers in the care of themselves; educating the public to a knowledge of what constitutes good health and how to achieve it.

Iquitos is a training center for health workers. Courses in public health are given to new physicians entering the SCISP. Here, too, are trained sanitary inspectors who man sanitary posts. Visiting nurses are trained for health centers and nurses aides for hospital work.

Other hospitals have been or are being built in San Martin and Satipo. Hospitalization, out-patient medical care, preventive medicine and health education generally are carried out in these hospitals. They have an average capacity for forty in-patients each and out-patient facilities. Built in towns with limited living and sanitary facilities, they must furnish living quarters for doctors, nurses and practically the entire hospital staff.

(*To be continued*)

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New Plan for Prepaid Surgical and Obstetrical Care

Backed by the medical profession of the State of New York and seventeen county medical societies in the Greater New York area, "the doctors' plan" to provide working men and women and their families with prepaid surgical and obstetrical care in hospitals was launched as the first official project of the United Medical Service at a dinner held on January 16th, at the Hotel Commodore in New York. Representatives of the medical profession, organized labor, industry, and hospitals heard officials of the United Medical Service and of the Associated Hospital Service of New York, its sales organization, discuss the service to be immediately offered to the public and plans being made by organized medicine for the development of a more comprehensive service to cover medical needs.

The present plan, as outlined by Rowland H. George, president of United Medical Service, assures individual subscribers with incomes up to $1,800 and families with incomes up to $2,500 complete payment of physicians and surgeons' fees for surgical operations, the treatment of fractures and dislocations, and maternity care, including prenatal and postnatal care. The service will not be limited to these income groups, Mr. George explained, but a physician treating subscribers with higher incomes may bill them for more than he receives from the United Medical Service. A special provision in the contract permits persons with incomes of $2,500 to $3,500 to submit bills in excess of the fees specified to a physicians' review committee for reconsideration, he said. Subscribers to the plan will have free choice of physicians. The United Medical Service will pay participating physicians specified fees based on rates similar to workmen's compensation schedules, and nonparticipating physicians up to seventy-five percent of the specified fees.

Speaking officially for the Coordinating Council of the five New York County Medical Societies, Dr. William B. Rawls, chairman, stressed the fact that the United Medical Service plan had ben initiated, fostered, and launched by the medical profession. Principles governing the plan, he said, were laid down ten years ago when members of local medical societies first began to study the problems of voluntary medical care and to work out plans for their solution.

The importance of nonpolitical cooperation between the medical profession and government, industry, and labor in providing good medical care to the public was emphasized by Dr. Charles Gordon Heyd, vice-president of United Medical Service. "The insurance must be on a voluntary basis," he said, "without political interference in order to avoid giving quantity, rather than quality care. Quality in any field costs money. For a large portion of our population medical care cannot be paid for on an individual basis".

Louis H. Pink, president of the Associated Hospital Service of New York, expressed the hope that the new organization would in time reach the entire community by raising income ceilings and broadening restrictions which now limit membership to a high percentage of employed groups. The launching of United Medical Service, he said, represented the first step toward a comprehensive health program with broader coverage to include home and office care, preventive medicine, dentistry, and home nursing.

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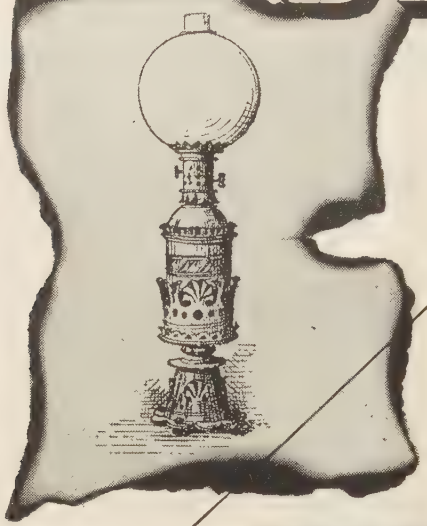

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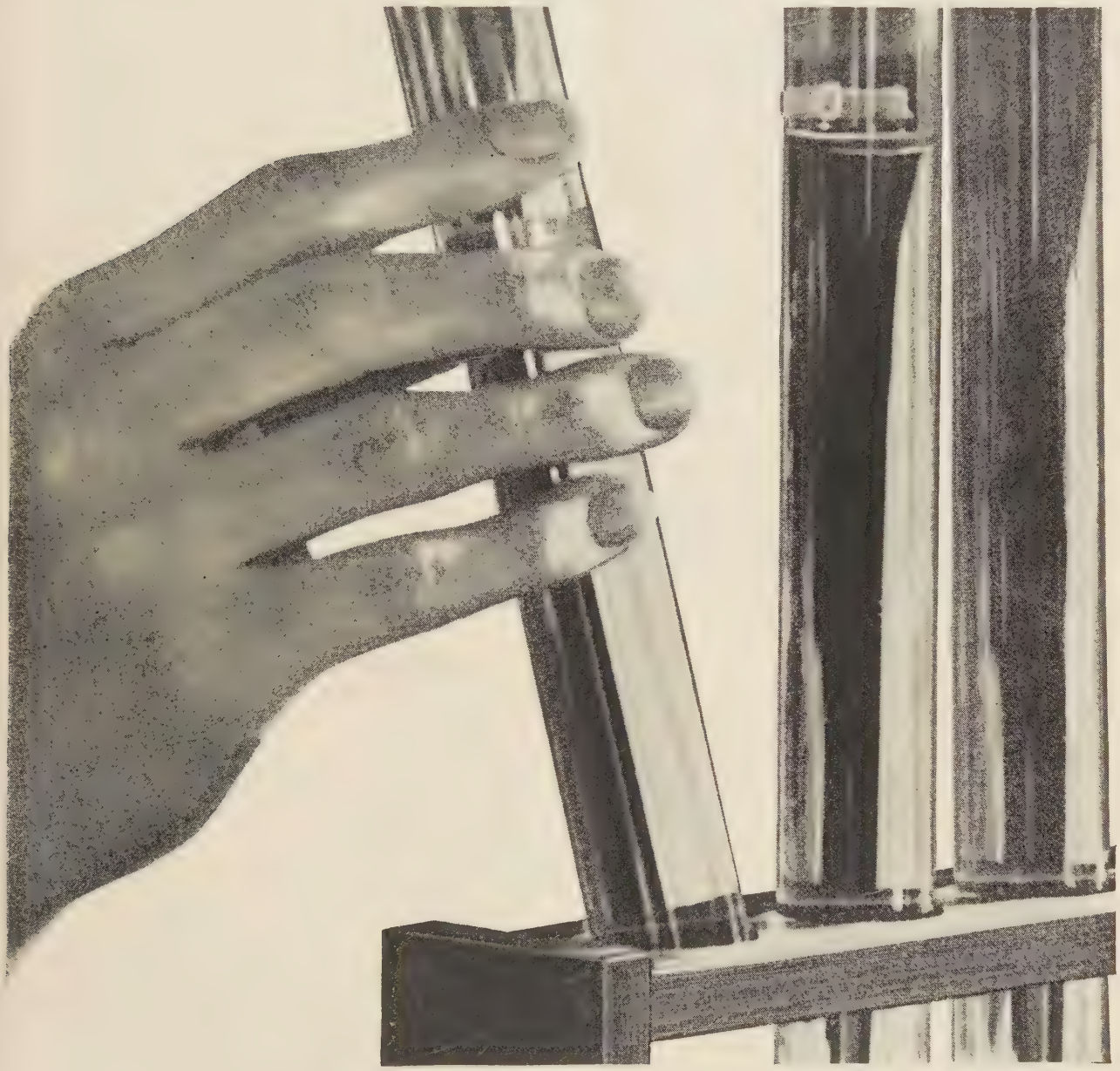

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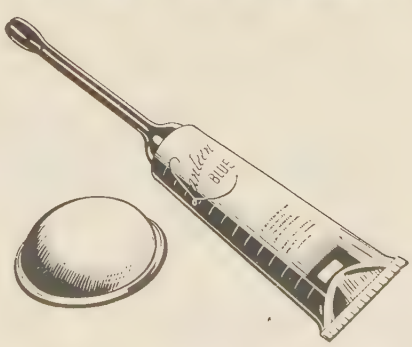

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Russian Treatment of Gunshot Fractures

Sergei S. Yudin, of Moscow, Honorary Fellow of both the Royal College of Surgeons and the American College of Surgeons, reports in detail on his method of treatment of gunshot fractures of the limbs (*Brit. Med. Jour.,* Nov. 6, 1943).

Yudin's methods are based on three main therapeutic factors: wide surgical excision of the wound, adequate local and general use of sulfonamides, and prolonged fixation in plaster. He considers surgical excision superior to chemical sterilization or packing, and recommends the use of dry sulfonamide powders. Complete immobilization is of paramount importance in these fractures, especially of the femur, to procure adequate union of the fracture and healing of the wound, but especially to preserve the limb and even the patient. He uses plaster of Paris bandages applied directly to the skin and immobilizing the whole limb. He combats the danger of shortening of the limb by skill in applying the plaster, using extension apparatus if necessary, or by inserting a pin as well as using plaster. He believes that contracture and stiffness of joints are caused by scarring of the muscles as a result of injury and infection, and adhesions, rather than by plaster fixation. He also considers fear of danger of suppuration beneath plaster exaggerated. Plaster bandages have proved to be very absorbent. Frequent examination and redressing of the wound he considers more harmful. He describes his operative procedures in detail, and in closing stresses the first task in treatment of wounds received in modern warfare: to prevent the loss of the man's life and limb by infection. He believes that this is mainly achieved by his operative procedures, prolonged immobilization in plaster and the local and oral use of sulphonamides.

Aural Rehabilitation of Deafened Soldiers

Before a deafened soldier can be fitted properly with a hearing aid he must have a custom fitted ear piece to which the aid can be attached, according to a recent release from the Surgeon General's Office. Until now these ear pieces were manufactured by commercial concerns and some delay was involved because of the necessity of packing and transmitting the cast and receiving the ear piece by mail. Now, however, ear pieces of clear acrylic or lucite are to be manufactured in the three Army hospitals for the deafened, which means the soldier gets his hearing aid about a week sooner.

Each soldier-patient with impaired hearing is scientifically tested to ascertain precisely which hearing aid is best for him. Since variations have been found even in aids of the same model, a stock is maintained at the hospital so the soldier receives the aid which proved most satisfactory for him when tested. In addition to equipping the men with hearing aids, instruction is given in lip reading and speech correction, if necessary.

A great many cases of deafness among soldiers which passed undetected at the time of induction have since been detected through the modern scientific methods now in use by the Army Medical Department. These deafened, as well as those with service-incurred deafness, are being rehabilitated at Deshon General Hospital, Butler, Pa., Hoff General Hospital, Santa Barbara, Calif., and Bordon General Hospital, Chickasha, Okla.

BOMBING MISSION (medical version)

TARGET FOR TODAY...not Japs, but *rats*...mosquitoes...flies...disease-carrying insects and vermin that infest the steaming jungles of the Pacific.

For this is a *bombing mission in white!* The "bombs" are loaded not with T.N.T., but more likely with D.D.T. which, sprayed from the air, seeks out and kills the adult mosquito and fly.

Yes, with D.D.T., with the aerosol bomb and countless other new developments in sanitation and disease control, the soldiers of medical science are proving themselves fighting men through and through. And, like so many other fighting men, they find pleasure and cheer in a few moments relaxation with a cigarette. Probably a Camel for, according to actual sales records, Camels are the favorite with smokers in *all* the services.

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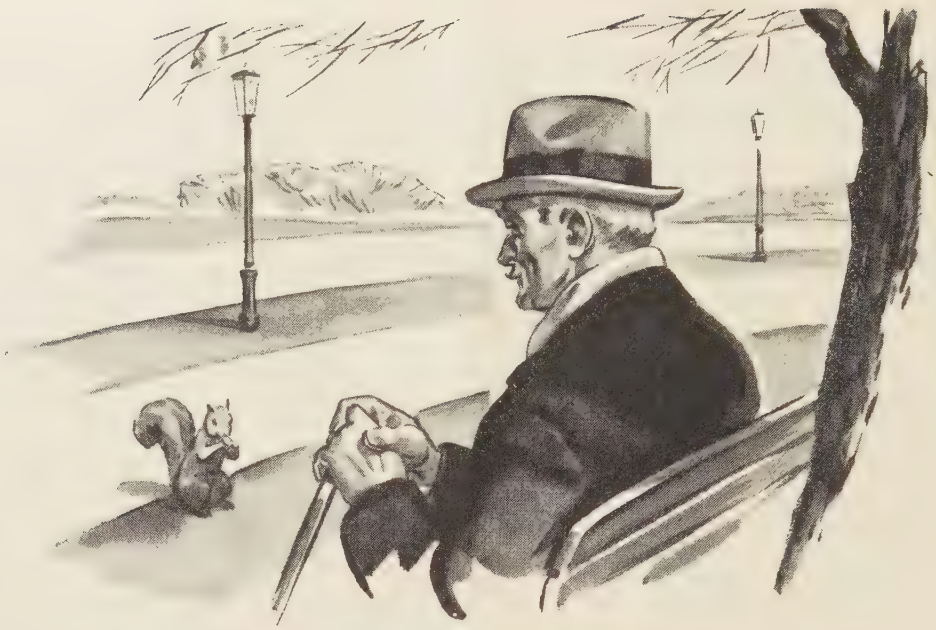

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'TABLOID' *Empirin* COMPOUND

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Lasker Awards for Research in Human Fertility

Dr. John McLeod, of the Department of Anatomy, Cornell University Medical College, has received what is believed to be the first award ever to be made for important research in the fertility of human beings. At the twenty-fourth annual meeting of the Planned Parenthood Federation, held in New York on January 24th, he was presented with a cash gift of $500 for his scientific research in the motility of human sperm cells. The award was made possible by the Albert and Mary Woodward Lasker Foundation.

In simple terms, Dr. McLeod has determined not only what factors cause the sperm cells to travel at the rate of about a quarter of an inch in two minutes in a congenial medium, but the substance which may increase or decrease this activity. Because of this discovery, it may be possible after further research to speed up or slow down the rate of speed of sperm cells, the former invaluable in the correction of infertility, the latter in the control of fertility.

Honorable mentions were also awarded to Dr. Samuel L. Siegler, for his book on *Human Fertility in the Female*, a comprehensive contribution to the diagnosis and treatment of sterility in women; and to Dr. Robert S. Hotchkiss for his book on *Human Fertility in the Male*, a pioneer text on treatment of the man.

Dr. Felix J. Underwood, executive officer of the Mississippi State Board of Health, will receive a second five hundred dollar award for his state's achievement in including planned parenthood services as an integral part of its public health programs of maternal care. This action on the part of Mississippi's health department in 1944, under the direction of Dr. Underwood, brings to six the number of states officially making planned parenthood a normal part of their public health programs.

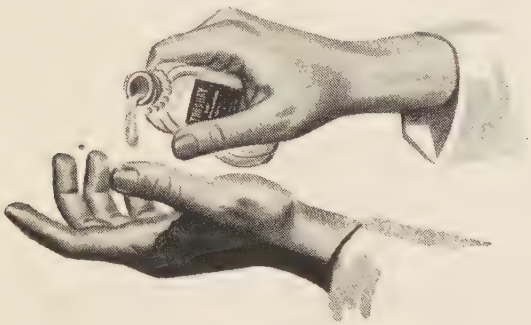
Members of the Federation's Medical Committee include Dr. Richard N. Pierson, Dr. Robert L. Dickinson, Dr. Abraham Stone, Dr. S. Bernard Wortis, Dr. George D. Cannon, Dr. Sophia J. Kleegman, Dr. Harvey B. Matthews and Dr. H. McLeod Higgins.

Preventive Medicine in Wartime

War always spotlights the dramatic rôle played by surgery and medicine. Less frequently, however, some unusual situation shifts the spotlight to the highly important rôle played by preventive medicine as, for instance, when our troops landed in the Philippines. There they found that the civilian population had suffered woefully for lack of a preventive medicine program under Japanese domination. Sanitation had deteriorated. Food was inadequate. Great numbers of the people were suffering from tropical ulcers, yaws, intestinal diseases and vitamin deficiency diseases. They were endangered by cholera, smallpox and typhoid fever. Now, with the return of our troops, preventive medicine is again being practiced in the islands. Carrying out plans prepared by the Civil Public Health Division of the Preventive Medicine Service, Office of the Surgeon General, sanitation is being restored, and the people are being immunized against diseases. Health offices have been reestablished in the majority of communities wrested from the Japs and dental clinics, dispensaries and hospitals have been established.

HOW MANY TIMES DID YOU WASH YOUR HANDS TODAY?

To *prevent* rough, red hands caused by frequent washing



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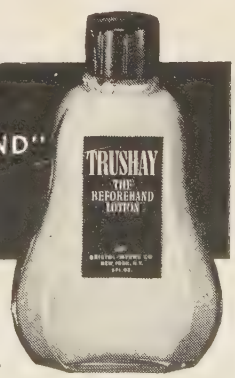

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Hope for the Handicapped

Many years of research, practice and results have removed the stigma on "backwardness". The startling benefits of adapted programs demonstrate constantly that a method can and should be sought for every case, even the most "hopeless". The skill and understanding of trained workers in the field of human physical and mental abnormalities, in the broadest sense, is challenged more than ever today in view of the urgent need to use our population efficiently and give everyone a chance to support himself and aid in the work of the nation. At a time when the physically and mentally effective are carrying such burdens a realization has at last come that every man, woman, and child has something to contribute and has the right to fullest development of potential ability. Inscrutable Nature gives undreamed of compensations to the handicapped. It remains for us to discover and use latent abilities hitherto undisclosed.

The most practical foundation for this work has already been laid by the workers with "exceptional" children. Unfortunately it is more than any small group can do to minister to the tremendous range of mishaps that may occur to the human animal, from deficiency of organs, glands, limbs, heredity, through diseases, accident and mental and psychological hazard. Each malfunction is a specialty in itself with many students and practitioners at work on it, yet the coordinating of these services to aid and adjust and place these individuals in society is vitally necessary. For the first time such a link is suggested in the papers published in the proceedings of the Ninth Institute of the Child Research Clinics of the Woods Schools. The two concepts of training the handicapped, and rehabilitation, usually studied separately here begin to merge. The interest of the Woods School Group has been in the openings appearing for adjusted adults formerly under their care. The realization is growing that methods used in developing these potential workers can be usefully directed to rehabilitation with greater economy and understanding than treating the two programs separately.

Two speakers in particular emphasized the relation between the two concepts. Dr. Herbert Bruner, of Teachers College, spoke on what has been accomplished for the older handicapped persons and what is proposed for them. He referred to the employment of handicapped workers by the Fords as one of the more promising developments in this country, stating that in February 1943 there were employed by them 11,163 men in various stages of disability, more than one thousand of them totally or partially blind and one hundred and eleven deaf mutes, all on full pay. A number of other organizations, he said, had discovered ways in which the handicapped can be trained to usefulness. State and national aid is increasing with the realization "That every person who can be rehabilitated is urgently needed now in the nation's work ... Tens of thousands of places ... must and can be filled by persons in various groups of the exceptional ... if the state will make sufficiently wise and broad provisions and ... leaders have the insight, ability, and energy to give to the exeeptional the timely assistance they need."

In rehabilitation clinics, rehabilitation officers, U.S. Employment offices and factories where handicapped workers are employed there has been seventy-five to one hundred percent placement of the exceptional. There still remains much to be done, and the federal government is working out broad provisions, especially for rehabilitating and training disabled veterans and certain war disabled civilians.

Dr. Bruner called atention to a little known fact. That the problem of the exceptional person, child or adult, must be world wide and national in scope is strongly emphasized if we consider that the average person in the world is not white, does not speak English, and makes less than $150 a year, and that our victory in the war will imply far greater hope for some sort of equality among men than ever before; hence, the need for creating opportunity becomes staggering.

In Memoriam

Sir Humphry Rolleston (1862-1944)

On September 24, 1944, Sir Humphry Davy Rolleston, one of the leading physicians of our generation, passed away in England. He was the beloved universal physician and teacher, and exerted a great influence on the advancement of medical sciences.

Born in Oxford, England, June 21, 1862, he was graduated in medicine at Cambridge University in 1891. He served as professor of anatomy and physiology at Oxford University and Regius professor of physics at the University of Cambridge (1925-32), president of the Royal College of Physicians (1922-26), vice-president of the British Medical Association, and occupied other high positions in many medical institutions and societies.

Sir Humphry and T. C. Allbutt edited *A System of Medicine,* eleven volumes, London (1905-11), and was the author of *Diseases of the Liver, Gallbladder and Bile Ducts,* London, 1905 (the third edition, written in collaboration with McNee, appeared in 1929); Diseases of the Peritoneum, in Osler's *Modern Medicine,* Vol. 5, Philadelphia and New York, 1908; Lumleian Lectures on *Cerebrospinal Fever,* London, 1919; *Some Medical Aspects of Old Age,* 1922; *Idiosyncrasies,* 1927; *Cardiovascular Diseases since Harvey's Discovery,* Cambridge, 1928; *The Right Honorable Thomas Clifford Allbutt,* 1929; and numerous other original contributions on medicine, medical history and medical biography.

Sir Humphry was the guide and teacher, not only of his pupils and collaborators, but also of the medical profession as a whole. Numerous valuable books on medicine and medical history appeared under his stimulation and advice. A great number of European and American medical authors acknowledge the important aid they received from Sir Humphry concerning references and general information. The writer acknowledges his thanks to Sir Humphry for his important help in compiling his books, *Jewish Contributions to Medicine in America, Leaders of Medicine* and *The Modern Medical World.* Sir Humphry supplied to the writer various historical information concerning his work, many photographs, and books and reprints which contain material discussed in his books. Furthermore, he also revised a number of galley proofs, making some improvements and corrections.

Sir Humphry was the incarnation of a great physician, and he won the love and admiration of all who knew him.

Solomon R. Kagan, M.D.
Roxbury, Mass.

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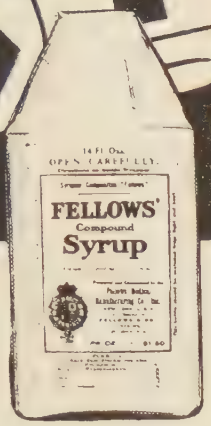

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ABSENTEEISM IN WAR INDUSTRIES

Causes and Corrections

M. MARTYN KAFKA, M.D.
New York, N.Y.

In modern warfare, the home front can be as vital to the war effort as is the battle front with our mechanized units in the South Pacific, in Africa, or in Europe. Indeed, the occurrence of accidents and sickness in our war industries, and the resultant slackening in output of needed materials, can be as much of a victory for the enemy as would be a retreat of our armed forces at any point on the battleline.

In our country's attempt to knock out the Axis as quickly as possible, the civilian working population plays a significant part. However, in the tremendous job of producing enormous quantities of war equipment for our fighting men in the far flung combat zones of the globe to help lend-lease, there is a tendency toward neglect and carelessness.

Actually, in 1942 alone, one million seven hundred and fifty thousand war workers were temporarily incapacitated by injuries (some were permanently maimed). These figures do not include the loss resulting from eighteen thousand persons killed while working during that same year. (Incidentally, two million four hundred thousand persons were hurt while they were away from their places of employment). Thus, it has been calculated that some three hundred and fifty million man days are wasted annually through industrial disability. Production (mostly of airplanes, parts for aircraft, parts for tanks, guns, machinery, tools, ships and so on) is affected.

Naturally "absenteeism" in industry can have a serious effect on the war effort and on how well or how poorly our fighting forces here and abroad can go forward, which depends on the continuous supply of military equipment.

Ever since Pearl Harbor a great deal has been said and written about the national problem of absenteeism in industry. There are many and varied causes for absenteeism. Certainly Captain Rickenbacker was not correct in implying that absenteeism is generally voluntary on the part of the defense worker. Nor are other uninformed people correct when they make accusations that are mostly unfounded or imagined. As a matter of fact, only by scientific analysis can one begin to understand the causes of absenteeism and thereby attempt its elimination as much as possible.

I have had the opportunity of observing carefully thousands of workers in a defense plant during a period of several months with the objective of seeking out the causes for absenteeism, and offering possible remedies. At this plant, there were about eighteen thousand employees, male and female, from various walks of life and of varied ages and temperaments. I found that few of that number stayed away from their work unless there was a valid cause. The majority of workers were absent because of accidents or because of acute illness of an industrial or nonindustrial nature.

I have listed here some of the most obvious areas of neglect, first, at the working scene, and second, on the way to work or at home. This will be followed by a series of recommendations to the plant directors which, if utilized, should lessen absenteeism caused especially by neglect of health. These are merely suggestive of bigger and better improvements that can be developed.

Areas of Neglect Around the Working Plant

1. Neglect of small wounds which develop into an infection. 2. Poor ventilation system in the plant may result in ill health. 3. Either overheating or insufficient heating may be responsible for the spread of the common cold or even influenza. 4. Neglect in periodically checking thoroughly the health of the cafeteria help. For example, overlooking the fact that those who handle food in a plant may acquire streptococcic sore throats or venereal diseases; these may indirectly spread communicable diseases.

5. Little thought given to staggering hours within a given shift, in coming to work, going to lunch and quitting time, in order that no large mass of employees leave at one time. As a result, departure is hurried and tense. Furthermore, washing and use of the lavatory become discouraging because washstands are overcrowded. In addition, elevators, stairways, and means of transportation are overcrowded, and highways are congested. General stress and strain of tension are increased, with the possibility of more frequent accidents.

6. The mess hall or eating areas and wash rooms are not scrupulously cleaned. 7. Insufficient time allowed to employees for meal period. Often going to and from the cafeteria uses up most of the time allowed, with hardly much actual eating time left. 8. Poor kitchen or dietitian supervision resulting in food unattractively prepared or without the wholesome variety needed to give maximum value of food.

9. Little done to correct hazards around parking areas. There are few or no lights for night use, or few signs during the day.

Perhaps one of the most serious causes of absenteeism is due to accidents in the plant. Here a lengthier discussion is required to present the problem even briefly.

Accidents in Plants

Often there are intangible reasons for accidents difficult to comprehend. However, upon close analysis, some of the underlying sources were isolated and linked with the real causes of the accidents. Some of these underlying causes were attributed to poor vision, undernourishment due to lack of sufficient food during the day, poor lighting, shadows cast by large objects and machines placed in a position of reflected light, or because of negligence in following safety regulations.

Any part of the body may be hurt in an accident. Obviously, the nature of the job often has a bearing on what part is injured. In some plants eye injuries lead other types. For instance, in one plant I attended, about thirty-two percent of *all* cases treated were due to eye injuries. In another plant, there were on the average seventy-five eye injuries daily which required subsequent treatment. Some persons were unable to work for days because of the harm done. Using the figures for this one plant, which was a loss of three hours daily per worker, due to eye injuries, the average man-hour loss on minor eye accidents alone would be approximately sixty-four thousand hours. This does not include ten thousand man-hours lost for major eye accidents annually in just one average war industrial plant.

In one plant which employed eight thousand, five hundred and eighteen people from October 13 to November 13, 1942, there were one thousand and eighty-six women and nine thousand four hundred and fifty-eight men treated for general accidents at the plant infirmary. For that month the total amounted to ten thousand five hundred and forty-four. Sixty percent of this number were new cases, twelve percent were redressings, and twenty-eight percent were nonindustrial cases.

At this rate, if the average treatment per individual were two and one-half hours per month, the total loss of time for 8,518 employees of this particular plant would be about thirty thousand man-hours per month and about three hundred and sixty thousand man-hours per year. This loss multiplied many times over, throughout the many factories in this country, looms as a national wartime problem that needs most careful study.

Neglect on Way to Work or at Home

1. Inadequately dressed employees, either overdressed or insufficiently dressed, expose themselves to colds and sore throats on the way to work or during relief periods, frequently leading to plant epidemics of sore throats or the common cold. This negligence is apparent especially during rainy or frosty weather. Just going from one building to another inadequately dressed may bring on a cold.

2. Neglect of minor illness by employee because of lack of medical care due to a shortage of doctors' services or clinics in the plant or in the community where the individual lives. These neglected minor illnesses often develop into serious ones later.

3. Transmission of infectious diseases from the home to the plant because of improper quarantine methods in the worker's home.

4. Snowstorms in the winter months have a marked effect on attendance of plant workers, because of poor or delayed travelling facilities or delay in clearing highways and roadways nearby. During one snowstorm I recall about fifty percent of the workers in a plant were absent because of extreme difficulty or even impossibility in using or obtaining transportation, via highways especially.

Industrial Health Problems

Because of the rapid mobilization of industrial activities and the accelerated production program in the great national crisis following Pearl Harbor, a number of industrial health problems came into being.

Everywhere one hears of crowding, housing shortage, rationing and other sociological problems that influence directly or indirectly the health of the war-worker. Unchecked, such problems can become alarming to the point of menacing our all-out war effort. In just one disease alone, tuberculosis, we find a threatening upward trend. Dr. E. Mayer, consultant on pulmonary diseases of the New York State Department of Labor, in a lecture, cited that the mortality rate for tuberculosis had shown an eighteen percent increase in England since the war started there, and that the war effort in this country would create a higher incidence in that disease in the near future. Needless to say, the common cold and other infectious diseases contribute generously to absenteeism.

One of the problems confronting industry at the present time, should be to guard against the many headed dragon of disease, and to assist in protecting and *educating* workers through "preventive medicine". Such a campaign should educate the public against the ravages of undernourishment, fatigue and general illness due to ignorance and neglect. This is no easy task. All preventive measures that are available to medical science need to be utilized to combat the causes of absenteeism.

In sponsoring such a program, industrial hygiene needs to be propagandized. It needs to be made popular, interesting, and even "glamorous". This should be a full-time program for a special department whose task should be to disseminate information on health and safety in a well organized procedure. Lectures of a health educational nature, illustrated by lantern slides, or films might be presented on such subjects as the importance of wearing protective goggles, made more impressive and dramatic by viewing what actually may happen to the eyes when unprotected and injured.

In addition, by reading educational serial pamphlets, "comics", book-style or cartoons on health subjects, and attractive posters, employees might become more intelligent and conscious of safety rules, diet, danger of exposure because of inadequate clothing protection, venereal disease, benefit of driving carefully and so on.

There are three basic health fields that when neglected contribute immeasurably to the general types of illness to which war-workers are subject. First, the ravages of fatigue: second, the ravages due to neglect

and ignorance of some of the laws of personal hygiene and common sense health, and third, the ravages of undernourishment. These should be given publicity in this preventive program of health education.

Health Factors

First.—Fatigue is one of the intangible menaces to health which insidiously sap our energies and senses in various ways and leave us wide open to accidents. This reduction in efficiency in sensory or mental reactions may be caused by: overwork, poor vision, lack of proper rest, long hours spent in going to and from work, emotional and psychological upsets connected with home surroundings and domestic troubles, worrying over problems at home, health and/or financial, and anxiety over the possibility of being inducted into the armed forces. This latter problem of anxiety with its attendant psychological ills can often be corrected through the part time services of a psychologist or psychiatrist engaged by the industrial plant.

Poor vision and lack of rest (resulting from loss of sleep due to overindulgence in recreation after working hours) are two more factors to be pointed out by the plant-health education process. There are a number of simple ways of reducing tension and inducing relaxation that lend themselves to "cartoon" technique of presentation so that the worker can learn them quickly.

Second.—We must consider the ravages of health due to neglect or ignorance of some of the laws of personal hygiene and "common sense" health. To function expertly, employees should, when possible, get natural sunlight. However, with three shifts a day, this is not always possible. Hence, it is strongly recommended that daily exposure to ultraviolet rays be arranged. This would be a great factor in helping to prevent colds and in giving an uplift to the efficiency, morale and general spirit of the worker. Army and Navy hospital centers have found ultraviolet rays most valuable in the treatment of convalescent patients. As a prophylactic measure alone it protects the worker from disease. It would be worthwhile for an industrial plant to interpret the cost of installing ultraviolet apparatus as one more way of obtaining miximum efficiency in employees.

As has been pointed out, eating habits need attention. The plant can encourage slower eating during plant meals by distributing three or four cafeterias or eating areas throughout the plant so that each employee would receive proper eating time. Usually considerable time is lost from the allotted period for eating because the employee spends too much time getting to the cafeteria or waiting to be served. On the surface, this precaution sounds unimportant, but it has been found that an epidemic of gastric upsets at a plant can slow down production as surely as any other cause. In one plant, I encountered an epidemic of thirty-three cases of gastric upsets, which started at about 4:30 p.m. on one day and terminated the following morning. Symptoms varied from severe gastroenteritis associated with violent pain, to spells of nausea and vomiting, weakness and exhaustion.

In considering the impetus given for better personal hygiene, by staggering hours for coming to work, lunch periods, relief periods, and quitting time within the given shift, the plant would in addition encourage more leisurely interludes with time and space for wash-up and toilet, as well as reduce or relieve the tension of mob entrances and exits. This can have a soothing effect on the usually overtaxed nervous system of the worker. In addition, think of the aid to the traffic and transportation this would give, reducing highway congestion and preventing accidents as well as curbing "transient-on-way-to-work" mishaps.

Finally, no area of caution, when it comes to health, is complete unless the danger concerning self-diagnosis, or a neighbor's snap-diagnosis, of minor illnesses, is pointed out. How human it is to accept the recommendation of a neighbor or one's own swift judgment concerning some ache or pain. For example, indigestion is one of the most frequently abused conditions, that can have far-reaching and even fatal effects. *Actually indigestion is not a diagnosis.* Many a worker has a stomach upset because he either eats too fast, or eats cold meals too often, smokes too much, does not have proper bodily exercise, worries too much, or because he has domestic troubles at home—which may be one obvious difficulty that needs attention. On the other hand, there may be a kidney, intestinal, heart, or urinary condition which demands more careful investigation. Self-treatment, in the end, creates a waste and often prevents early recognition of the actual cause.

Third.—The third health factor we have to consider is the deterioration of health due to neglect of certain basic laws of nourishment, the abuse of which leads to innumerable sources of illnesses that ultimately result in absenteeism. The old saying that an "army travels on its stomach" is none the less true when applied to the enormous civilian population. Here is an area difficult to check upon and difficult to follow up. Let us say that the employee is cautioned to pay strict attention to his diet at home. He must arrange a well-balanced diet consisting of sufficient amounts of food values in protein, calcium, phosphorus, and so on. He needs to have sufficient amounts of vitamins and minerals, and so on down the list.

How can we know he is being intelligent about it and following these suggestions? We know that the wife or mother who prepares the meals at home is not always well informed. Some are old-fashioned or dominated by "old country" "one dish" diets, such as corned beef and cabbage, spaghetti and meatballs, or goulash. All these meals are first rate and enjoyable but when there is little or no variety because of the omission of basic food values, somewhere along the years breakdown in health will result.

Thus, it becomes the duty of the "concerned" war plant to spread the gospel of intelligent eating by means of education. Posters, lectures, pamphlets and films publicize and circulate the information. An intelligent popular campaign on "food joins the colors" can arouse more enthusiasm for "good" eating. A popular, well-informed plant dietitian can prepare sound, wholesome foods in attractively displayed meals showing the benefits of each dish.

Naturally, the expense and time devoted to these areas for prevention of absenteeism has to be met. But it is a service for employees of which industry is becoming increasingly concerned. In the long run it pays dividends.

502 Park Avenue

PHYSICAL THERAPY UNITS AND METHODS USED BY THE NAVAL MEDICAL DEPARTMENT (Philadelphia)*

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It is now a generally accepted fact that physical and occupational therapy plays an important rôle in alleviating the suffering and repairing the injuries of those wounded in war. Physical therapy measures also have a definite field of usefulness in the rehabilitation of these men.

An interesting exhibit was presented at the 1943 meeting of the Association of Military Surgeons by the Physical Therapy Department of the Philadelphia Naval Hospital, depicting the newer apparatus available for the treatment of the war wounded and the methods of treatment, with stress on recent trends. Included among the newer units and methods are the following:

1. The local saturated-air heat therapy and the general saturated-air fever therapy units; 2. the local hydrogalvanic tanks and the general hydrogalvanic baths; 3. the hypothermia unit for refrigeration therapy; 4. mild shock therapy; 5. general fever therapy cabinets for short treatments; 6. artificial ultraviolet radiations to "desensitize" individuals to solar exposure; 7. sodium penicillin, by negative galvanism, for iritis; 8. removal of sebaceous cysts by the electric current; 9. resistive exercises, and 10, passive stretching.

1. Saturated-Air Heat Therapy

Saturated-air heat therapy has been found useful where deep penetration of heat is needed. The claim of the makers of this form of heat (a one hundred percent saturation of the circulating air in the cabinet) is that it is better than:

a. *Conductive heat.*—Because the tolerance limit of the human skin is too high to permit enough heat to be absorbed into the body by conduction.

b. *Radiant heat.*—Because in this type of heating the skin is stimulated to throw off more heat so that the heat requirements are increased and there is danger of a burn if an attempt is made to heat up the tissues too much. Such a burn may result because the intake of heat must exceed the heat loss of the body in order to warm the deeper tissues.

c. *Short wave diathermy.*—According to the department of industrial hygiene of the University of Pittsburgh School of Medicine (Murray B. Ferderber and co-workers), although electrically produced heat results in a considerably higher deep muscle temperature (between 107° and 109° F.) within a couple of minutes, the rate of blood flow increase is not great (forty to sixty percent greater than normal) and a return to normal rate occurs within a few minutes.

In comparison with the other types of heat production, these workers assert that the best is saturated-air heat therapy. This form of moist heat is said to produce a safer, lower, deep muscle temperature of 106° to 107° F. (1), and though more time is required to raise the muscle temperature (twenty minutes), the rate of blood flow per unit time is two hundred to four hundred percent greater than under normal conditions. The deep muscle temperature is retained for forty-five minutes to two hours, depending upon room temperature, and, in a three hour treatment, as long as six hours after the treatment had been completed.

The principle is simple. Saturation will prevent heat loss from the skin, since wet surroundings cannot take up additional moisture from the epidermal layer. Saturated-air heat units have an air-conditioning system of the general dew point type in which a highly atomized water spray, in the upper end of a small duct, supplies both the active power for circulating the air and the heat and moisture for saturating it at a desired temperature.

In giving this treatment, it is not necessary to exceed two and a half hours at any time. One and a half hours are sufficient to produce results. Although it takes thirty minutes as an optimum period for increased blood flow, the addition of an extra hour increases the chances for a better result. Our results are based on the hour to one and a half hour treatments, since a larger period of time was considered prohibitive for the number of cases we had to treat.

The temperature range of the machine is from 112° to 120° F., produced by a water recirculating unit which consists of a self-contained reservoir holding approximately fifteen gallons of water preheated by immersion heaters and controlled by a thermostat. The thermostat is set for the above mentioned temperature and in fifteen minutes the water is heated. The water will retain its initial temperature as long as the unit is being used electrically. When the water has reached the desired temperature, a switch is closed which brings a rotary pump into action. This pump forces the hot water into a spray, following which this same water is recirculated back into the reservoir.

Early intensified treatment of from one to three hours daily for five to six days is advised. The remainder of the treatments are spread on the basis of three weekly until it is evident that there is improvement, or a lack of it.

Report of a Case of Severe Burn

This case shows the type of military wound received, the newer method of treatment, including moist heat, and the result. The patient, C.S.S., an aviation machinists mate, aged thirty-three years, was admitted to the hospital on August 31, 1943. His chief complaint was a burn (gasoline) to the hands, with stiffness and aching. The history of the case was as follows:

While engaging the enemy during the Santa Cruz battle in October 26, 1942, the patient was burned by gasoline flames resulting from an enemy plane crash. He suffered severe burns of both hands, right ankle and face. As soon as the patient recovered from shock (about forty-five seconds), he staggered out of his

*The opinions and assertions contained herein are those of the writer and are not to be considered as official or reflecting the views of the Navy Department or the Naval Service at large.

compartment, his clothing aflame, removed his life jacket and burning clothes, and arrived at a first aid station on the ship where a corpsman removed the burnt skin from the left hand, applied tannic acid jelly and a sterile dry gauze bandage. No morphine was administered so that the patient could abandon ship if orders were given. Burns of face, hands and ankle were dressed when the battle lulled. The patient was removed to a destroyer forty-five minutes later and the remainder of the burned skin was removed, sulfathiazole ointment applied and the burn rebandaged. He was transferred the following morning to sickbay on a cruiser. Here morphine was administered, the right hand sprayed with triple dye, the remaining burned skin removed from the left hand and sprayed with sulfa powder. He was placed on a liquid diet with morphine administered every four hours. At the hospital a skin graft was ordered and the amputation of the fifth finger at the metacarpophalangeal joint was performed. At a U.S. Naval Hospital he was given a full thickness skin graft between the fingers after the removal of the webs of scar tissue. Then he was treated with whirlpool baths at 110° F., followed by daily massage to both hands, until transferred to a Receiving Station on July 26, 1943. No further treatment was received until he reported to the Philadelphia Naval Hospital.

Physical therapy treatment.—On August 31, 1943, ten months after the burn, the patient's chief complaints were "left hand stiffening and aching of fingers". Saturated-air heat therapy was administered, one hour daily in the local unit (for extremities), at a temperature of 110° F., for the first week; then gentle stretching and manipulation to relieve flexion deformity and to increase extension. At the start of treatment the skin showed an abnormal red discoloration. The fingers were stiff. The fifth finger of the left hand had been amputated due to burns of the tendon. On September 13th, the patient said his fingers felt "freer" since the start of the daily treatments with the local saturated-air unit. The dark red color of the skin was changing to a more normal pink, and there was less numbness in hand. On September 15th, the pain and aching in hand had decreased. The hand was still stiff but improvement in movement was evident. Scar tissue tightness had diminished rapidly as a result of the treatment. On October 4th the skin color was more nearly normal, the skin and muscles of the hand was more resilient and there was an appreciable increase in finger joint motion. Treatment was concluded.

Results of Treatment with Saturated-Air Heat

At the Philadelphia Naval Hospital the first seventy-three patients treated with moist heat received 607 treatments. Many of the men had adhesions and scars from burns or moderate changes in or around joints, due to disease or injury.

Twenty percent were benefitted, receiving complete relief of symptoms and good functional results; fifty-five percent had temporary mitigation of pain and disability, and the remaining twenty-five percent either did not complete treatment or were not at all helped.

The cases under treatment were frequently those in which no benefit had been derived from other commonly employed modalities in physical therapy or from medicaments. One half of the patients treated, in the heated humid air units, were suffering from some form of chronic arthritis. These were only temporarily relieved.

The use of a form of heated, saturated air is an accepted method of procedure in our department. We found it produced good results in the acute cases of trauma and disease. However, in our attempt to determine its usefulness, these were not the cases we were particularly interested in, since such cases could be cleared up by shorter, simpler methods. The fact that relief was procured in a number of the more difficult cases was considered encouraging, even though longer treatments were required (one to one and a half hours) than with the more commonly employed diathermy and infrared apparatus.

2. Hydrogalvanism

Another of the appliances that is new to a physical therapy department and which we have found to be useful, is the modern hydrogalvanic tanks and baths. Dr. Richard Kovacs, who has had more experience with this form of treatment than any other civilian physician, speaks of the "reawakened interest in the therapeutic use of the galvanic current as a tissue alterant and counterirritant".

Galvanic baths, given in porcelain tubs, contain two or more carbon electrodes encased in a wooden frame to prevent direct contact with the patient. A galvanic current supply, connected to two separate circuits on the apparatus, is turned on gradually to a comfortable toleration, usually sixty to one hundred milliamperes, for from fifteen to forty minutes. A treatment is given every second or third day.

These new galvanic baths cause general muscular stimulation, acceleration of metabolism, and are said to be of value in generalized arthritic conditions and polyneuritis, and as an aid in the treatment of peripheral nerve injuries (2). We have found this modality of use in a number of cases where diathermy or other means of heating the tissue not only did not relieve, but sometimes aggravated, the condition for which treatment was being given. The baths have proved beneficial when a complete body application was needed. In this way many affected areas could be immersed in the solution at one time and exposed to the "vasomotor stimulation effect" of the galvanic current. A complete immersion and the use of from three to eight electrodes permit the current to reach almost any part of the body.

This modality could be employed on board ships or on Island bases where short wave diathermy applications may be inadvisable because of interference with radar. These machines do not interfere with radio, radar, electrocardiographic apparatus, or any type of long or short wave communication, thus eliminating the need for careful copper wire screening or special filters for the treatment booths.

History.—The modern beginning of this form of therapy is traced back to J. J. Stanger, a tanning master, who in 1902 accidentally became exposed to a hydroelectric bath with tanning solution and received a shock which almost killed him but after which he felt relieved of his rheumatic pains. It was his opinion that his improvement was due to a combination of electricity and tanning solution, so he carefully re-

peated his exposure until his rheumatism disappeared.

The machines being used in the Naval Hospital contain a selenium rectifier for the production of a direct and variable pulsating current. Each has two separate circuits, having four outlets, two positive and two negative on each side of the machine, thus permitting the attachment of up to eight electrodes for the simultaneous administration of current to eight parts of the body.

Technique of hydrogalvanic baths.—The technique of the general hydrogalvanic bath, as we have been using it, is as follows:

Water flows into a tub covering the patient up to his neck. The temperature of the solution should be 99° to 102° F. Six ounces of tanning bark solution (to lower the resistance to the electric current) is poured into the water. The large triple electrode attached to one positive pole, on the outlet of the hydrogalvanic machine, is under the upper back. The two side electrodes are each likewise connected to a positive pole outlet on the machine. The double-throw center electrode (openings on both sides), between the thighs, leads to the negative pole and an electrode under the feet is also attached to the negative pole (patient's outlet) on the machine.

At the start, a five minute treatment to toleration (sixty to one hundred milliamperes) is given, then the polarity is reversed while another five minutes of treatment is furnished. This constitutes an ordinary, average application.

General hydrogalvanic massage.—A general massage is often given after the immersion described above. This is accomplished by disconnecting the upper back electrode from the positive pole and the center electrode from the negative pole of the hydrogalvanic machine. The center electrode is replaced by a massage or brush applicator, which is now the only one connected to the negative pole. Then the entire body is given a general massage with the massage applicator on the negative pole and the other three electrodes on the positive pole. The treatment is concentrated on the portion of the body mainly affected.

By gently moving this hand operated applicator over the tissues, variable stimulation is produced, depending on the strength of the current. With moderate current strengths, muscular contraction is easily obtained and is useful where multiple areas of the body are involved. With a mild current this hand operated electrode may be used on skin areas to produce an "electric underwater massage". At the end of the treatment the current is gradually shut off, the patient dried and allowed to rest for one half hour.

Pulsations.—Galvanic pulsation are given by means of a turn of the switch control on the panel of the instrument. The current is on as for an ordinary treatment. The surging effect so produced is useful in the management of weak or paralyzed muscles and nerves, as well as for its stimulating effect after a general hydrogalvanic bath. The warmth and buoyancy of the water contributes to the effectiveness of the surges.

Local hydrogalvanic tanks.—Similar in principle and practice to the general hydrogalvanic baths is the treatment in the local hydrogalvanic tanks. It differs in that all or any one of the four extremities can be placed in the tanks and the treatment applied to one, to two, or to all of the arms and legs without the need of immersion in a bath tub. Localized underwater massage, pulsations or mild shocks to the extremities can be given just as in a bath.

These local tank treatments have been found effective when applied to patients suffering from a localized arthritis or neuralgia. They have also been found helpful to patients with subjective symptoms of weakness, numbness or paresthesia localized to the extremities.

Results of Treatment with Hydrogalvanism

Of the first ninety-seven patients treated by local and general hydrogalvanism in the department, twenty-five percent evidenced complete relief of symptoms; forty-five percent were definitely improved; ten percent were slightly improved; twelve percent were considered inconclusive, since they were well one day and complained of symptoms another day, and eight percent were not relieved.

These cases had been resistant to other forms of treatment. The combination of heat, buoyancy, vasomotor and muscular stimulation aided in relieving those who were afflicted with some of the more stubborn conditions. This group included those suffering from arthritis, neuritis and combat fatigue.

Local treatment.—Seventy-five of the ninety-seven patients were treated by local hydrogalvanism, in tanks, with a total of 609 treatments, for an average of eight treatments per patient. The degree of variation in the number of treatments was as low as two to as high as twenty-five. The therapy was continued until results were obtained, or it was decided that no further treatment would be of benefit.

General treatment.—Twenty-two of the ninety-seven patients were treated by general hydrogalvanism, in tubs, with a total of 194 treatments, for an average of nine treatments per patient. The degree of variation in the number of treatment was similar to that in the local applications, as were the final results.

Cases Relieved by Hydrogalvanism

Arthritis.—Twenty-eight patients between the ages of twenty-five and fifty-five years, suffering from an arthritis of from a few months to many years duration, were given treatments for relief of symptoms. Six received no relief, four were marked "inconclusive", and eighteen were benefitted. These patients received an average of eleven treatments with a variation of from two to thirty-three immersions. Neither the duration of the symptoms nor the age of the patient indicated any relationship to the number of treatments required for relief.

Neuritis.—Veterans of this and the first world war afflicted with neuritis or neuralgic pain in the extremities received treatments in the hydrogalvanic solutions. The duration of symptoms was from two months to almost two years with relief after four treatments in one of the cases, to twenty-five treatments in another.

Combat fatigue.—A few patients suffering from combat fatigue were given treatments by general hydrogalvanism (immersed in the bath filled with the Teca tannin solution) and appeared definitely benefitted by the treatment. The small number of cases are of little statistical value but indicate that this modality should be considered in treating cases of nervous fatigue.

(*To be continued*)

Symposium on Disorders of Ear, Nose and Throat

ON THE COMPARATIVE PATHOLOGICAL PHYSIOLOGY OF ATROPHIC RHINITIS: NASAL BLOCKAGE IN PIGEONS*

A Preliminary Report

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In the routine of my practice, there have been many patients with a history of nasal obstruction who also had loss of hair; and conversely, those who came for treatment of alopecia frequently had demonstrable nasal pathology of the nature of atrophic rhinitis. These observations raised the question of what the relation could be between these two symptoms, and thus led to the experiments reported here.

The subject is a difficult one with which to deal, since the cause of atrophic rhinitis is not known and because of the fact that alopecia may result from a variety of causes. In an attempt to study this combination more closely, an experimental method was decided upon, which was to include artificial nasal obstruction in pigeons and the observation of any resulting phenomena. Pigeons were chosen not only for greater ease in experiment, but also because, as Proetz has found, the nasal mucosa in birds is most highly developed and differentiated (1).

Atrophic Rhinitis

Embryology.—The primary anlage of the olfactory organ in all vertebrates is represented by a thickening of the epithelium on either side of the anterior surface of the head.

The development of the olfactory organ in birds has been most accurately described from a study of the domestic fowl, but evidence has shown that it is much the same in all birds.

The nasal anlage in birds has been found to appear later than that in many other vertebrates. From its first appearance on the lateral surface of the head, it migrates ventralward. The olfactory field deepens to a pit, which becomes still deeper by active growth of the surrounding tissue. The borders of this nasal pit fuse by approximation of the inner and outer nasal processes with the maxillary process. The secondary nasal cartilage of fowl is made up of the lateral wall of the nasal pit and is comparable to the nasoturbinal of mammals (3).

Anatomy of the nasal cavities of the pigeon.—In general appearance, the nasal cavities of the pigeon are fork-shaped, with a long curved roof. The anterior wall is formed in front by the horny mandible and the lacrimal bones; on the inner side and below by the hard palate anteriorly, and by the soft palate posteriorly. This soft palate is firm and somewhat resembles a fibrous band, which is resistant even to the knife under moderate pressure.

The nasal septum is poorly developed, and appears as a thin, transparent membrane. The vomer is not constant in birds, and it may be absent in the pigeon. When it is present, it is very slight (4, 5, 6, 7).

On the lateral walls of the nasal cavity of the pigeon, there are two scroll-like bones covered with mucous membrane. These are the turbinate bones, which run from before backward. Their surfaces are reddish gray in color, when they are in the fresh state. The turbinated bones are so arranged that there are spaces between them, which form the socalled meatuses.

The individual characteristics of the internal respiratory tract in birds are of special importance to this thesis.

In the pigeon, nine bronchial tubes connect air spaces among the viscera, and extend into the hollow bones (2). All bones of the pigeon contain air except the caudal vertebræ, forearm, hand and hind limb (9). Air sacs are also present between the muscles. The lungs are relatively small and their ventral surfaces connect with the air sacs. The air passages in the lungs are few compared to the capillary richness and these capillaries are described as being naked (10).

Histology.—In general, the nasal cavity proper is lined with a ciliated, columnar epithelium which is of the pseudo-stratified type. The epithelium rests upon a layer of vascular connective tissue, which contains both mucous and serous glands. The small ones are convoluted, while the larger and more numerous ones are of the tubular-acinous type. Many of these latter are mixed; both mucous and serous glands. This tissue is the well known Schneiderian membrane. The portions over the turbinates are thicker than in other parts (11).

The ciliated cells extend through the entire thickness of the epithelial layer, their slender terminals resting on the basement membrane. Irregularly shaped columnar or conical cells occupy the spaces between the stratified cells. These rest upon the basement membrane but never reach the free surface. There are also mucus-containing goblet cells, which rest upon the basement membrane. This basement membrane varies greatly in thickness. It is generally well developed, but in some places it is hardly demonstrable. It contains no capillaries, but is definitely cribriform, which allows connective tissue fibers and leucocytes to pass through it.

The *tunica propria* consists superficially of loose, fibroelastic tissue, which is rich in cells and contains occasional collections of lymphocytes. Rarely, there are suggestions of discrete lymph nodules. As the periosteum is approached, the layer is thicker, with a more abundant network of elastic fibers, which at times are dense and at others fewer.

This layer has a rich blood supply, branches of

*From the services of Dr. George M. Coates, Graduate School of Medicine, University of Pennsylvania; and Dr. David Husek, Mt. Sinai Hospital, Philadelphia, Pa. Microscopic studies by Col. J. E. Ash, Medical Corps, U.S.A., curator, Army Medical Museum, Washington, D.C.

which form a capillary network about the subepithelial glands, from which the blood flows into a plexus, which is first superficial, then deep. Embedded in the walls of the venous channels are circular and longitudinal bundles of unstriped muscle fibers (12).

The thickness of the nasal mucosa varies in different parts. Over the inferior and parts of the middle turbinates and the adjacent portions of the nasal septum, it is several millimeters in thickness compared to less than one millimeter elsewhere. The thickness of this membrane depends upon the cavernous development of the vascular layer.

Physiology.—There are two functionally clearly defined regions of the nose: respiratory and olfactory. In the respiratory region, the lining is made up of columnar ciliated epithelium. These cilia produce a definite current toward the pharynx, which extends into the lumina of the mucous glands (13). In the olfactory region, the epithelial cells are columnar, but without cilia.

The venous plexuses in the thick mucosal layer over the turbinates have the character of an erectile tissue, especially over the inferior turbinate, along the dependent border and posterior extremity of the middle turbinate, and the adjacent nasal septum. The filling and emptying of the cavernous tissue is controlled by nerve reflexes (12).

The glands of the mucosa of the respiratory region have no counterpart in the olfactory areas. These glands give rise to an abundant secretion, and there is a fine equilibrium between the amount of glandular tissue normally present and the amount of circulating air. This allows an optimum amount of mucous secretion to provide humidity for the column of air inspired.

Using a Coleman electrometer, Fabricant (14) found that when the nasal secretions are collected, they change pH almost at once. In situ, the pH never remains constant over an appreciable period of time. Normal fluctuation was found to be between 5.5 and 6.5. The pH changed with the application of heat and cold. With heat, they became acid; with cold, alkaline.

Living cilia are destroyed by a few minutes' drying; the optimum temperature is 18-33 degrees C.

Mucosal secretions.—Mucus is composed of: mucin, 2.5 to 3 percent; salts, 1.0 to 2 percent; water, 95 to 97 percent. Mucin is a glycoprotein. That which is secreted by the nasal mucosa has a greater viscosity than that in other regions. The pH is normally 6.8 to 7.4 (1, 15).

Blood supply.—The blood supply is from the sphenopalatine artery, which anastomoses with the ethmoidal, external nasal, septal and palatine arteries. Blood vessels are present in the deepest region of the mucosa and periosteum.

Innervation.—Innervation is through the olfactory nerve and the sphenopalatine ganglion; the nasal nerve and the internal branch of the ethmoid nerve (13).

It is necessary for normal nasal function, that all parts of the nasal fossa shall be accessible to air currents in proper proportions. If the middle and superior meatuses, which represent the olfactory portion, are disproportionate in size, anosmia will develop, with tissue metaplasia and infection, due to abnormal drying.

Normally, the stream of air passes medial to the anterior tip of the middle turbinate. The middle meatus is recessed so that the middle turbinate lies lateral to the main air stream. In this way, dry, cold or contaminated air is kept out of this meatus, and a proper proportion of the inspired air is diverted to the olfactory area. The erectile function of the lower turbinate especially regulates the actual capacity of the nasal fossa by increasing or decreasing it. The inspired air passes medial to the anterior margin of the middle turbinate and is not influenced by it, but the posterior tip extends into the expired air stream and deflects it into the middle meatus. Expired air hardly enters the inferior meatus, but passes in against the face of the sphenoid, down over the inferior turbinate, into the vestibule. Thus, "nasal stenosis may be complained of if the middle meatus is blocked, even when there is a free airway below this level", according to Lack (16).

Heating inspired air.—When external air is at 0 degrees, air in the pharynx is 36 degrees; external air, 10 degrees, in pharynx 36.5 degrees; external air 25 degrees, in pharynx 36.8 degrees. In the average person, there is approximately 2.5 degres of heat loss in terms of body temperature, for heating inspired air by the nose. Cone (17) found in seventy-five normal persons that the temperature of the inferior turbinate averaged 32 degrees compared to 37 degrees of oral temperature. Findings of different authors vary somewhat from these figures.

Paget (18) observed that the general result of an incomplete nozzle effect in the nose is to diminish antibody production.

Pathology.—In atrophic rhinitis, normal epithelial cells give place to a squamous, stratified, nonciliated type. There is a marked decrease in the submucosal connective tissue and obliteration of blood vessels, with diminution or complete destruction of glandular elements. The basement membrane is thinned and infiltrated with small round cells. Usually, there is obliteration of the venous sinuses and there is a tendency to obliterative endarteritis. In time, the mucous membrane is replaced by fibrous tissue and the underlying bony structures, especially the inferior turbinate, atrophy or show degenerative changes. This condition results in abnormally enlarged air spaces. More rarely, thickening may occur instead of thinning.

The nasal secretions are so altered that they form a thick, tenacious and adherent layer on the tissue surface, which leads to drying and crust formation. This encrusted discharge may be so abundant that the nose is entirely occluded. The condition may extend to the pharynx and larynx (19).

It has been reported (20) that patients with atrophic rhinitis have sometimes complained of a burning sensation in the scalp before treatment, although biopsy showed no obvious morphological changes.

The report of Cody (22) may be of significant interest in this relation—that vitamin A is necessary for the maintenance of normal nutrition of the nasal mucosa. He suggests definitely that A-avitaminosis may be a factor in atrophic rhinitis. He finds that its effect in the nose may occur before it appears in the eye (dark adaptation).

Experimental.—Filatow (21) found that when nasal respiration is absent or diminished over a long period of time, a hypoplasia of the mucous membrane develops. The epithelial cells become thinned and there is a reduction in the lymphoid layer. Migration of leucocytes stops and the capacity of the cavernous vas-

cular system is lessened. There is complete return to normal with restoration of nasal respiratory activity. In contrast to these changes in the respiratory epithelium of the nose, the olfactory cells remain normal, even in cases where the nasal respiration has been excluded for some time.

Seki (23) somewhat similarly reports that long-continued closure of the nose in rats leads to an underdevelopment of the nasal mucosa, if the latter is not subjected to stimulation of any sort. The epithelium in the respiratory region on the closed side is visibly lower than on the opposite unclosed side. The total thickness of the mucosa is less and the glands are less well developed. Frühwald (24) found similar changes in rabbits following one-sided closure of the nose. In the open side, he found an average of greater amounts of small-celled infiltration and greater penetration of the overlying epithelium by wandering cells.

In the experiments of Proetz, on dogs and rabbits, one nostril was closed by suturing the tissues and the animals were later killed at periods of from six weeks to three months. On examination, very definite changes were found in the epithelium of both sides. On the open side, cilia were lost and the epithelium was stratified. On the closed side, there was a great increase in goblet cells, which have no cilia and were filled with mucin.

In dogs, his findings were somewhat different. One hundred twenty days after the operation, the lining mucosa on the open side was much like thin squamous epithelium. The subepithelial tissues were increased in thickness, with an increase in the number of lymphocytes. This corresponds to the findings of Frühwald, which were noted above. On the closed side, there was no increase in the mucin-containing cells. The epithelium on this side was the tall columnar type and ciliated.

These observations are comparable to Hilding's (25) experiments on dogs and rabbits, which consisted in the surgical closure of the right nostril only. The animals were killed after intervals varying from three weeks to six months. In rabbits, on the open side, the cilia were lost and the epithelium was stratified. On the closed side, there was a great increase in mucin-filled goblet cells. There were no cilia. Changes were found to vary in degree directly with the time factor. In dogs, on the open side, the epithelium was thin, the subepithelial layer was thickened and contained an increased number of lymphocytes. No changes were present on the closed side.

On the whole, these changes were less marked over the turbinates than on the septum. In both groups of animals, the turbinates on the open side were hypertrophied in comparison to those on the closed side.

Alopecia

Opinions concerning the nature of alopecia are exceedingly diverse. According to McCarthy (26), alopecia is not a disease entity, but a symptom, due to a variety of causes. Many authorities agree with this idea. Nakagawa (27) has found that alopecia begins as a proliferative, inflammatory process, which appears as a perivascular infiltration around the hair follicle and the papilla. This process is followed by hypertrophy and sclerotic thickening of the connective tissue elements of the follicle. Finally, the condition is one of atrophic changes; thinning of the epidermis and cutis, hyperplasia and sclerosis of the collagen, with a destruction of the elastic fibers. There is rarefaction of the root sheath with trophic disturbance and falling hair.

Knowles, Corson and Decker (28) report the presence of primary obliterative changes in the blood vessels and lymph spaces, followed by atrophy of the glands of the skin.

Wooley (29) produced alopecia experimentally in albino mice by feeding a synthetic diet lacking inositol. Martin (30) was unable to reproduce Wooley's findings using black, Rockland strain mice. He suggests that the difference in results may be due to genus variation, imbalance of vitamin B complex members, or altered bacterial intestinal flora. More recently, Vorhaus, Gomperts and Feder, in an experimental study of human alopecia, did not find sufficient change in hair growth following the administration of inositol, to establish it as an antialopecia factor in man (31).

Much space and time have been given to the discussion of the relation between the endocrine secretions and alopecia, as well as the relation of this condition to disturbed function of the sympathetic nervous system. These two causal factors are in themselves so closely related, that it would seem hardly possible to differentiate between them. This can be illustrated by briefly recording a few instances: Bonanchi, neuroendocrine; Smith (E.B.) hypothyroidism; Banckus and associates, disordered sympathetic function; Stein, neuroendocrine; Putz, neurovegetative; Spillman, thyroid deficiency; Leriche, due to sympathetic injury; Bregman, due to effect of quinine acting on the already sympathicotonic vegetative nervous system; Grace, due to improperly filled teeth; Matras, trophic, neurotic and infection, due to neurotrophic virus.

Opposed to the endocrine theory is the work of Waisman and Kepler (32), who studied 138 cases and from their data they conclude that at present the assumption of an endocrine cause for alopecia is unwarranted by the facts. In their experience, endocrine treatment was ineffectual.

Eagle, Baker and Hamblen (20) observed that endocrine treatment of atrophic rhinitis improved the general condition of the patient, but that the histopathology of the nasal mucous membrane was not changed. This finding is presented in this connection, since so much of the pathology of the two conditions—atrophic rhinitis and alopecia—is fundamentally similar.

Pigeon Experiments

Two sets of young pigeons, which were reared at room temperature and fed upon a standard mixed diet of corn, bread and water, with vitamins, were selected for this study. The birds were housed well above the ground, and were generally protected from any disturbing influences. Three birds from each set were used as controls.

Under ether anesthesia, the operation consisted of dipping a cotton wrapped applicator into a tannic and gallic acid solution and the cotton then inserted well within both nasal vestibules. With fine ligature silk, each nasal aperature was closed by suture in a manner to insure complete nasal blockage. No special effort was made to maintain aseptic conditions.

Reaction.—The outstanding reaction of all birds was an extreme irritability. In every case, there was a constant attempt to remove the nasal stoppage. They ap-

peared cold, shivering and some sneezing (April-May) and there was little animation; a tendency to close the eyes. Feathers began to drop out (alopecia?). After being allowed to fly, they preened their feathers and appeared to feel better. One bird laid and hatched two eggs from which normal young appeared during the experimental period.

Weights and *blood counts* were taken before and two weeks after the experiments. The averages of these figures on the eighteen experimental birds and the six controls are as follows:

	CONTROLS		EXPERIMENTAL BIRDS	
	Before	*After*	*Before*	*After*
Weights	11	11.5	10	9.6
Blood:				
Hemoglobin	97	104	100	103
Red blood cells	3,628,000	3,770,000	3,809,000	3,418,000
Polymorphonuclears	66	104	72	63
Lymphocytes	39	34.5	37	45
Color index	1.3	1.3	1.3	1.5

According to the findings of Riddle and Braucher (33), the blood findings in normal pigeons is as follows: Red blood cells: males, 3,228,000; females, 3,096,000.

Hemoglobin is higher in males than in females (since the figures here are given in grams percent, they are not directly comparable with those of the writer).

In general, the following findings were recorded: Red blood cells are higher in males than in females. They are highest in autumn; lowest in summer. Both red blood cells and hemoglobin are lowest in hot weather. Both are reduced in diseased birds.

Pathological report.—The report of the pathological findings on the experimental pigeon material was much the same in all of the specimens examined, with only a difference in degree between individual birds:

"Beginning in the most anterior coronal sections, which include the nares, there is some superficial desquamation of the epithelium in both the squamous epithelium of the nares and the respiratory epithelium of the nose. There is a small amount of inflammatory reaction in the mucosa of the latter, consisting principally of small mononuclear cells, but including also a few polymorphonuclears. There is moderate edema and more marked congestion of the turbinate mucosa. The antrum contains a few cells of exudate in the mucosa and several patches of mucoid material. The sections further back show a somewhat more intense inflammatory reaction, particularly in the mucosa of the turbinate, and there is a high percentage of polymorphonuclear cells. This exudate invades the epithelial mucosa and at some points there is actual erosion. In the most posterior section, there is an accumulation of fibrillar, mucoid material in the cavity of the nose. The inflammatory reaction is still prominent, again most marked over the turbinates, but there is no erosion of the epithelial mucosa."

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The discussion of this article and the list of references will appear in the next issue.

THROAT TROUBLE

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Of all the ready-made diagnoses which are offered by the patient, "throat trouble" is one of the most common. Like "colds", the phrase may mean anything, everything, or nothing. But to pass it off lightly may set up a serious error on the part of any medical adviser; therefore, whenever we are consulted as to some vague condition of the throat, diagnostic skill is put to the test.

Some idea of the origin of the complaint may be derived from a description of symptoms, how and when the condition began, and how long it has continued. Therefore, a painstaking history is of paramount importance. Sometimes it is not enough to obtain enswers to specific questions, but we may obtain hints from such general "talk" as we are willing to allow, with due respect to time wasted. There are many people who cannot get to the point promptly. Their minds work by a process of circumlocution, and we must give them plenty of leash, although this may be somewhat exasperating.

Several attacks of "sore throat" and "high fever" with the presence of glands in the neck immediately lead to a suspicion of infected tonsils, but what if the tonsils have been removed? Well, have they been? Examination by means of pillar retraction and pressure squeeze, may disclose infected stumps. These may be quite small, and, if so, they may be a potent source, not only of local, but of general systemic infection, such as "rheumatism", etc.

A condition, often overlooked, which causes the patient to complain of his throat, is chronic sinusitis with postnasal discharge. One may miss seeing this if the patient has recently dined or has taken a drink—coffee, tea or any liquid which may wash the surface of the posterior wall of the pharynx. In some cases, this discharge is as sticky as glue, and has to be pried loose. This gummy secretion may come from the nasal and postnasal mucous membrane or from the sinus membrane, and is entirely a matter of faulty function. When persistent and long continued, there are changes in the mucous cells which are permanent. Such conditions are not improved by "operation", and may be made worse.

The important point is to suspect the presence of sinusitis, or at least an infection of the nasal mucous membrane which has never recovered. It is useless to "paint" the nasopharynx; one must get at the cause. Moreover, I am always reluctant to accept a diagnosis of nasopharyngitis, especially if it is preceded by the word "chronic". Like "catarrh" it is useful only in covering up our ignorance. In my early days, working in clinics, we often had Jewish patients from Russia or "Russ-Poland". They frequently complained of *"stick im hals,"* which in my youthful experience was usually ascribed to constipation, chronic passive congestion due to sedentary habits. Many of them were "cutters" or "tailors". They probably had a latent sinusitis.

A word should be said about so-called "granular pharyngitis", which is, however, an unfortunate phrase. Even the dictionary (Dorland's) states that it is "a chronic variety (of pharyngitis) in which the mucous membrane becomes granular". These granules look like little mounds or humps lying behind the mucous membrane of the posterior pharyngeal wall. They may be red as compared with the surrounding area, or show tiny pin-point white spots. In reality they are infected lymph glands which become hypertrophied and, therefore, persistent. They can be just as potent a source of bacteria as can the tonsils or any other "adenoid" body, reminding ourselves that the Greek word *aden* means *gland*. After tonsillectomy and adenoidectomy, these "mounds" may be more in evidence than previously. They should be destroyed by chemical or electrical cauterization. Seen so frequently in cases of rheumatic fever, one wonders whether they were not the natural habitat of one of the streptococcus group! And may I say at this point, even though it seems irrelevant, that I have long maintained that every patient with rheumatic fever has had or is having "sore throat" due to the streptococcus? This point of view has been only partially accepted by authorities, but both our Army and Navy medical men make frequent note of this fact, although not admitting the connection in its entirety.

The lingual tonsil is a potent source of throat trouble, although it is seldom mentioned, and is not infrequently overlooked by the throat specialist. It often enlarges after the lateral tonsils have been removed, probably because of some compensatory relationship, and one sometimes sees all the discomfort from an acute infection of the lingual tonsil, which is so characteristic of lateral tonsilitis. The late Dr. Sidney Yankauer paid especial attention to this "south tonsil" and developed a technique for its removal with capsule. It can well be the cause of chronic cough. The same is true of a dragging uvula which scrapes the epiglottis.

Of all throat trouble, the larynx is the most important as a site of origin. Here we are always confronted by the great diagnostic dilemma, syphilis, tuberculosis, or malignancy. The symptoms and signs of all three are by no means pathognomonic, and are likely to be confusing and confused. Hoarseness and pain on swallowing are two outstanding factors in the problem. Unfortunately, any hoarseness is likely to be ascribed to a "cold" or simple acute laryngitis, and the treatment is almost synonymous with compound tincture of benzoin administered as a steam inhalation. This is satisfactory if the guess is right, and the voice ordinarily comes back in a day or two. However, any hoarseness which lasts more than two weeks should be viewed with suspicion; for it may be due to one of the big three mentioned above.

Syphilis appears in mucous membranes before it is seen on the skin, and that is the time to make the diagnosis if it has not already been made from the chancre. Secondary syphilis in the mouth or throat is not hard to diagnose, but tertiary syphilis, especially in the larynx may be elusive. Fortunately in these days we have excellent diagnostic tests from the blood and spinal fluid, but, as common as the disease is, it is sometimes forgotten as a cause of ill health.

Tuberculosis of the larynx is usually secondary to pulmonary tuberculosis, in fact, it is suggestive of an advanced, incurable lesion. There is poor voice or loss of voice, pain on swallowing, and the patient seems very ill. The destroyed areas are circuminfiltrated, and the color of the mucous membrane is pale and inert looking.

Syphilitic ulcers are likely to appear as punched-out areas surrounded by the reaction of inflammation.

Laryngeal Malignancy

Laryngeal malignancy strikes terror to the mind of everyone, patient, relative and physician; for the mark of death is upon the man who carries this lesion. To be sure, results from treatment of whatever kind are much better than they used to be, but looking back over the years, there seems to be about as much late diagnosis as there ever was. Complacency, a faulty diagnosis of laryngitis from a cold, and temporizing, still take a heavy toll. Even the trained laryngologist is loathe to make a positive diagnosis from examination. He must study the larynx at several sittings, take a "section" for laboratory study, and have the opinion of other students of the larynx. It is an unpleasant task to tell the next of kin that your patient must lose his larynx or his life; it is even worse to be wrong, and remove a papillomatous larynx! Here tissue diagnosis may mislead because certain types simulate each other even under the miscroscope.

All that can be hoped for or asked for is in early diagnosis, either by the "general man" who is first consulted, or by the specialist whom he calls upon for help. It is often extremely difficult to get the larynx quiet enough for prolonged study. A fleeting glimpse is useless, for every square millimeter must be brought into view. Even then one may be thrown off track by a subglottic growth which can be seen only upon "retrograde laryngoscopy". The gagging reflex is the *bête noire* of every examiner. It is so hopelessly out of control that it is foolish to scold the patient. The more the patient tries to help, the worse the difficulties become. Cocaine solution, ten percent, helps, but there may be arching of the tongue, partial fixation of the jaw, or a covering epiglottis to contend with. In the recalcitrant cases, one must do a "direct tube examination", that is, one must put down into the larynx a lighted tube for inspection, as if one were looking down a gun barrel. This should be done in an operating room with plenty of assistants, under stringent technique. A biopsy can then be done from the segment removed for microscopical study.

After a diagnosis of malignancy is certainly established, the end is not yet; for many patients reject laryngectomy, some refuse any operation of any kind, even thyrotomy, and valuable time is lost before the patient can reach a decision. Recourse to radium and x ray therapy seems to be the easier way out, but is not the method of choice in most cases unless the condition is inoperable. Frequently the family physician is called upon to help decide the most desirable course of action. His responsibility is very great, too great in fact; for his conclusion can seldom be based on wide experience. Throat trouble in the larynx means trouble for everybody concerned, and even the "expert" laryngologist finds plenty of worry before the patient leaves his professional guidance and care, "for better or for worse".

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EAR DISEASES IN EVERY DAY PRACTICE

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The great majority of ear diseases have their incipiency in infancy and early childhood, and many of them are closely connected with certain general diseases, especially the acute exanthemata. For this reason they are all the more liable to be overlooked, both by the medical attendant and the parents who are chiefly concerned about the general affection without any suspicion of a local one. At such a time, when one's resources are taxed to the utmost in combating the systemic trouble, one is not apt to direct special attention to the ear and frequently it is not until convalescence begins that the aural symptoms are noticed.

During the course of any of the acute febrile or infectious diseases, frequent and thorough inspection should be made of the ear, nose, throat, and nasopharynx, even though there may be no aural symptoms complained of by the patient. The latter organs are the starting point of many cases of incurable deafness, their mucous membrane being involved in nearly all the acute infectious and febrile diseases. The extension of this catarrhal condition to the eustachian tubes, unless properly treated, will almost invariably cause middle ear trouble. The rhinitis associated with scarlet fever or measles has an especially virulent effect upon the middle ear and particularly so when either one is accompanied by nasopharyngeal diphtheria. The latter disease may extend through the eustachian tubes into the tympanum, causing ulceration and destruction of tissue. In some cases, when the microorganisms invade the labyrinth, severe and even total deafness may result. Paralysis of the palate is also of frequent occurrence and this interferes with the proper ventilation of the tympanum, sooner or later producing a hyperemia and catarrh of the middle ear. Ear diseases may also originate during an attack of smallpox, chickenpox, whooping cough or mumps.

Etiology

Of the acute febrile diseases which enter the etiology of aural affections, influenza ranks first, being accompanied in many cases by an intense aural hyperemia entirely disproportionate to the conditions usually seen. Deafness to a certain degree is common during an attack of typhoid fever and, unless it receives early and proper treatment, is quite likely to be permanent. In pneumonia and bronchitis middle ear trouble may result from the passage of the infectious germ through the blood current and its lodgment in the tympanic mucous membranes, or by the condensation of air in the middle ear brought about by excessive coughing.

The syphilitic, rheumatic, tuberculous, and strumous cachexias predispose to and unfavorably influence diseases of the ear. Syphilis induces catarrhal swelling of the mucous membrane of the middle ear and the auditory nerve becomes secondarily affected. Aural diseases of rheumatic origin are usually chronic or have a tendency to occur frequently. Often they are accompanied by no general rheumatic symptoms until weeks or months after the aural lesion has become manifest. The almost incurable progressive deafness accompanied by tinnitus aurium is most frequently of a rheumatic nature. In tuberculosis the most common ear trouble is a chronic, persistent and destructive suppuration of the tympanum. Lesions of the ear are as common with kidney trouble as lesions of the eye. In Bright's disease a change in the tension of the labyrinth may be brought about by interference with the general venous circulation. Eczema of the auricle and furuncles of the external auditory canal are of common occurrence in diabetic patients.

Intracranial diseases, such as brain fever, meningitis, cerebral tumors, abscesses or hemorrhages, may diminish or destroy the hearing by direct damage to the auditory nerve or by causing anemia, congestion or hemorrhage within the labyrinth. Cerebrospinal meningitis ranks first as a factor in the etiology of acquired deaf-mutism.

Insanity seems to claim an almost exclusive companionship to hematoma of the auricle and the appearance of the latter makes the prognosis of the former very grave.

That certain drugs exert a specific influence upon the organ of hearing is a well-known fact. These changes constitute anemia or hyperemia of the labyrinth or tympanum, which nearly always passes off after a time, but if the drug influence is pushed to any great extent, structural changes are brought about in the labyrinth and more or less permanent deafness results. Quinine is particularly prone to affect the ear, and the habit of prescribing large doses of this drug to break up a cold in the head cannot be too strongly condemned. During an attack of coryza there is almost always more or less congestion of the middle ear which is greatly increased by the administration of quinine. Salicin and salicylic acid, with its salts, stand next to quinine in their influence on the ears. Alcohol and tobacco used to excess may, through their influence upon the mucous membrane of the nose and throat, exert a deleterious effect upon the ear. This is especially the case when tobacco is taken in the form of a snuff when the smoke is exhaled through the nose. Otalgia is frequently the result of oral irritation caused by cutting, crowding or caries of the teeth, inflammation of the gums, ill fitting plates, etc.

Nasal douches or syringes, either anterior or posterior, should never be used, as they are likely to force fluid through the eustachian tubes into the tympanum, and snuffs, in either powder or liquid form, should be condemned for the same reason.

Dangers of Ear Drops

Regardless of the fact that in nine-tenths of all ear diseases the pathological process is on the inner side of the impervious drum membrane, "ear drops" are being constantly prescribed for all forms of aural disease. It would be a difficult task to enumerate all the irritating substances that are being inserted, with all solemnity, into the outer ear passages; in fact, it some-

times seems that there are but few fluids which have not been used in this way. Perhaps the most commonly used domestic remedy is sweet oil and laudanum. If warm when inserted, the heat for a few seconds may slightly ease the pain, but the alcohol of the laudanum is irritating to the membrane, while the oil becomes rancid, irritates, and serves as a culture for aspergillus. The same is true of all greasy substances so frequently put into the ear.

Politzerization

Perhaps the most common form of treatment adopted by the majority of practitioners for nearly all forms of ear disease is the use of the Politzer bag. All honor to Dr. Adam Politzer for giving to the profession this easy and valuable method of inflating the middle ear, but I am of the opinion that if he could have foreseen the manner in which it was destined to be misused and the immense amount of harm that would result from its misuse, he would have hesitated long before making his discovery known. In many cases politzerization is a dangerous procedure; for instance, in unilateral deafness, think of the wisdom of subjecting the well ear to such treatment, for it is impossible by this method to confine the air pressure to one side. Many a case of deafness is produced or made worse by the stretching of the drum membrane resulting from politzerization. Rupture of the tympanic membrane is sometimes the result of too forcible compression of the air-bag. This is particularly likely to happen when a patient is recovering from an attack of acute otitis media and the perforation in the membrane has just healed over, or when a portion of the tympanic membrane consists of cicatricial tissue resulting from some previous rupture. Attacks of mastoiditis may result from politzerization during an attack of acute otitis media before perforation of the membrane and when the middle ear is partially filled with pus. Inflammation of the tympanum may also be produced by a mucopurulent discharge being forced through the eustachian tubes from the nose. The same objections contraindicate Valsalva's method of inflation, though in a less degree.

Syringing out the external auditory canal in proper cases is a valuable procedure, but unless done properly, may do considerable harm. The canal should be straightened by drawing the auricle upward, outward and backward, and the current of water should be directed against the various sides of the canal, thus preventing too much force from being exerted against the tympanic membrane. The water should be of a proper temperature, and the canal should be thoroughly dried afterward. The prolonged presence of water in the canal, even at the temperature of the body, may cause trouble. This fact is emphasized by the vast increase in the number of aural cases during the swimming season.

Blisters and poultices, over or in the region of the ear, are certainly of limited usefulness and considerable potency. Poultices or hot water used to excess during an acute inflammation of the middle ear softens the membrane tympani and hastens its rupture. If used after perforation they favor the growth of granulations and have been known to cause facial paralysis.

Conditions Secondary to Ear Disease

Having so far dwelt principally upon the causes of ear disease, I will briefly refer to the remote affections and symptoms which are secondary to or dependent upon such diseases. Considering the rich supply of nerves in the external and middle ears, and the free anastomosis of these nerves, it is not to be wondered at that pathological changes within these parts may give rise to remote symptoms. Thus, through the trigeminal and pneumogastric nerves, branches of which supply the external and middle ears, the stomach, lungs, or diaphragm may suffer from reflex irritation brought about by hardened cerumen, foreign bodies, etc., in the external auditory canal. Ear disease, by reflex irritation of the pneumogastric nerve through the medium of the trigeminal, is capable of establishing and maintaining an irritable state of the digestive apparatus.

Cases of cough arising from aural reflex are not common. They are usually spasmodic and persistent in character, so whenever a cough of that nature does not respond to the usual treatment an examination of the ear will often reveal the cause and the removal of the irritation will effect a cure. Hiccough is frequently dependent upon aural irritation. I recall having a patient with catarrh of the eustachian tubes, who, on several occasions has been awakened from sleep by a severe and rapid hiccough which was relieved by Valsalva's method of inflating the middle ear.

Eye symptoms, such as nystagmus, strabismus, paralysis of the superior oblique muscle, and contraction or dilatation of the pupil may also result from aural irritation.

Brain complications resulting from neglected ear disease are quite common. Abscess of the brain, meningitis, phlebitis, sinus thrombosis, epilepsy, facial paralysis, and vertigo are some of the possible results of neglected purulent inflammation of the middle ear, and the etiology in many such cases is first discovered in the postmortem room. Statistics show that more than one-half of all brain abscesses are caused by ear disease and that not far from two thousand deaths occur annually in Great Britain and four thousand in the United States from this cause. Bergman asserts that the history of otorrhea, past and present, together with persistent sleeplessness and a temperature remaining steadily at about ninety-nine degrees F. or more, are sufficient indications for opening the cranial cavity for the purpose of exploration.

Irritation in the external or middle ear, or any condition which will produce an alteration of intralabyrinthine pressure, may cause vertigo, which is often mistaken for stomachic vertigo or the socalled bilious epilepsy. Woakes of London believes that all vertigo is essentially auditory in its location and that when it exists where there has been no prior ear disease it is due to reflex impressions.

Earache is a common complaint, especially in children, and although the majority of the subjects recover without aid of a physician, prompt and proper treatment in many instances is of vital importance to the patient. A large percentage of the permanently deaf may trace the beginning of their infirmity to an earache, which, being regarded by their parents or

guardians as the merest trifle, was consequently allowed to go without proper medical attention. Pain in the ears nearly always means inflammation, and especially is this true if the hearing is impaired. In most instances it is caused by an acute congestion within the middle ear but may be due to some abnormal condition in the external auditory canal, such, for instance, as furuncles, impacted cerumen and foreign substances. In exceptional cases it may be reflex from a decayed tooth or a hypertrophied tonsil. In any case the first thing to do is to locate the seat of the trouble, which may be done by a thorough inspection of the parts, ascertaining whether or not there is any redness, bulging or retraction of the drum membrane, any soreness in the external auditory canal, or any tenderness accompanying pressure upon the tragus or over the mastoid bone. Thorough inspection of the nose, throat and teeth should also be made. If the hearing is not interfered with, the pain in all probability is of neuralgic origin.

Treatment of Otalgia

The proper treatment to pursue in these cases of otalgia, when not of neuralgic origin, is, first, the application of leeches in front of the tragus. In a very young child a small blister in the same location may be substituted unless the case is a severe one. Heat applied over the ear, or a hot boracic or carbolic solution instilled into the ear will often act like magic in lessening the pain and absorbing the congestion, but care should be exercised not to continue the hot instillations longer than really necessary, as too much moisture will soften the tissues and make them an easier prey to the inflammatory process. Inflation of the tympanic cavity is advisable in many cases when there has been no formation of pus in the cavity. Sometimes the instillation of a warm solution of cocaine or atropine and cocaine mixed will allay the pain and abort the attack. Should these remedies fail to relieve, paracentesis of the drum membrane should be performed at the most dependent part. This procedure will immediately relieve the pain, prevent spontaneous rupture, and favor the evacuation of pus, which otherwise, through one of its several means of communication, might produce septic inflammation of the brain or mastoid cells. The puncture, under favorable circumstances, will heal within a few days, with complete restoration of hearing after a few weeks, while a spontaneous rupture would take much longer or may never heal at all, and in either case usually leaves the hearing more or less impaired on account of the resultant cicatricial tissue and improper tension of the tympanic membrane. Following the puncture or rupture of the drug membrane is a mucous discharge, which, if neglected or improperly treated, will become purulent and have an offensive odor. The treatment of such discharges comprises cleanliness, drainage and the removal of diseased tissue, this being accomplished by properly syringing the ear with a warm antiseptic solution followed by the instillation of a saturated solution of boric acid and an occasional and gentle inflation of the tympanum.

If this treatment does not effect a cure, all granulations should be removed and astringent solutions used. Insoluble powders should not be blown into the ear as they may occlude the perforation and cause mastoid trouble, and for the same reason the patient should not be allowed to wear cotton in the ear.

Foreign Bodies in the Ear

Foreign bodies in the external auditory canal, in the majority of cases, are best removed by the syringe, care being taken to direct the current of water against the walls of the canal instead of against the substance itself. Inspection should also be made after each syringeful has been injected in order to ascertain the effect. A camel's hair brush dipped in glue, brought into contact with the foreign substance and allowed to dry, will often be of service in its extraction. Instruments should not be used until these means have failed as, especially in the hands of the inexperienced, they may do great damage to the drum membrane and to the walls of the canal. In many cases more damage is done by the attempts at extraction than by the presence of the foreign body itself. Several cases have been reported in which the substance has been shoved through the drum membrane into the tympanum, producing middle ear inflammation followed by cerebral disease and death. Unless the attending physician has the proper means at hand for removing the foreign substance, and is quite sure of success, it is better for the patient to leave it alone until such time as the proper means and skill can be secured.

Foreign bodies in some cases may remain in the ear for an almost indefinte period without exciting any local irritation and sometimes even without the patient's knowledge. Children often place foreign bodies in their ears and say nothingg about it for fear of punishment, and they may not be discovered for months afterwards. Several years ago a sister from one of our charitable institutions brought a little girl to me with a pebble crowded into the external auditory canal of the right ear. Upon inquiry as to how it got there the answer was that another little girl threw it in. Knowing such a thing to be impossible, and suspecting that it had been inserted by the patient herself, I asked her if she had anything in the other ear, to which she replied "no". Inspection of the left ear, however, revealed the presence of a substance which proved to be a wad of paper literally covered with hardened cerumen. It must have been in there at least several months. Insects frequently get into the external auditory canal and often cause intense pain. The best method to pursue in such cases is first to pour in some warm sweet oil, then after a few moments syringe it out.

Impacted cerumen does not occur in ears otherwise healthy, but, in the majority of cases, is the consequence of a chronic, nonsuppurative inflammation of the middle ear, or of some irritation transmitted by the trigeminal nerve to the tympanum and auditory canal. In these cases therefore, it is not sufficient simply to remove the cerumen but the cause of it should be looked for. Impacted cerumen may be easily removed by the syringe, the surgeon being particular after its removal to dry the canal thoroughly and inflate the tympanum. If it is too hard to remove in this way, it may first be softened with a solution of bicarbonate of soda.

1126 WALTON AVENUE

Editorials

Notes on Social Hygiene

A controversy has long raged in civilian circles and the armed forces as to which is the fountain or source of infection of the venereal diseases. A review of the reports of efforts to locate alleged sources of infection for the armed forces in the civilian population leads to the conclusion that both agencies are equally at fault.

The infected personnel of the armed forces fail, more often than not, to secure adequate information as to the alleged source. A soldier or sailor on leave in a civilian community fails to recall with whom he has been, where he has been, and what he has done prior to his acquisition of gonorrhea, syphilis or chancroid. Nowhere in the available printed sheets of information distributed in training centers and Army and Navy posts is to be found a frank exposé of the need for the man in the army or navy to learn a valid name and valid address prior to his anticipated or surprise exposure. No form is provided in the prophylactic kit, for example, to permit of jotting down the name, description, address, place of meeting, place of exposure, which the man may withhold and destroy if he remains well, or may present to his medical officer if suspecting or learning of infection later on. Official prophylactic stations in general do not insist upon recording a valid name, description and address prior to administering chemical prophylaxis.

The enlisted men, the warrant officers and the commissioned personnel assigned to venereal disease prophylaxis do not stress the importance of revelation of all possible exposures in the periods prior to acquisition of the disease and during its incubation time. The selfish interest of the individual in the armed forces to whom, where and how much he paid or spent on the occasion of his exposure to venereal disease is not understood by the average man of the armed forces.

Several features of the agreement by the War and Navy departments, the Federal Security Agency and State Health Departments in measures for control of the venereal diseases in areas where armed forces or national defense employees are concentrated, adopted by the Conference of State and Territorial Health Officers, May 7-13, 1940, are presented:

3. When authentic information can be obtained as to the probable source of venereal disease infection of military or naval personnel, the facts will be reported by medical officers of the Army or Navy to the State or local health authorities as may be required. If additional authentic information is available as to extramarital contacts with diseased military or naval personnel during the communicable stage, this should also be reported.

4. All contacts of enlisted men with infected civilians to be reported to the medical officers in charge of the Army and Navy by the local or State health authorities.

6. Decrease as far as possible the opportunities for contacts with infected persons. The local police department is responsible for the repression of commercialized and clandestine prostitution. The local health departments, the State Health Department, the Public Health Service, the Army, and the Navy will cooperate with the local police authorities in repressing prostitution.

An exception to article 3 exists. Familial contacts with naval patients will not be reported. It is a serious breach in public health administration control of venereal disease. The sailor on leave may be exposed at the port of entry of his ship. He may cross half the continent of the United States to visit his home. Unknowingly, since he has not yet recognized the evidence of venereal disease infection acquired at the port of entry or elsewhere, the sailor exposes his wife. At the close of his leave he returns to duty. He is found infected with a venereal disease. According to the provincialism of the Navy, the fact of the exposure of his wife is not related to the local health department of the community of residence. No Navy installation exists within hundreds of miles of her home. No machinery is known to exist by which the exposed wife to an infected member of the Navy forces known to have venereal disease can be examined. The wife may retain her infection and upon subsequent exposure of her treated and cured spouse, may reinfect him. The ancient dictum "the Navy takes care of its own" may have had *raison d'être* when the Navy was a small compact seaboard organization with few mature and married men.

The United States Public Health Service, State health departments and local health jurisdiction are required to transfer to the medical departments, as noted in article 4, all contacts of infected men with infected civilians, be they marital or nonmarital contacts. Examples could be multiple, adding fuel to the fire of controversy; does the civilian population infect the armed force personnel in its midst, or is the man in uniform a source of infection to the civilian population of the communities he visits or at the post to which he is on duty?

Perhaps the pot is calling the kettle black, or vice versa. Let there be light on this subject of reciprocal reporting and clarity in the human relationships between eleven million members of the armed forces and the one hundred thirty million of civilians.

Freud and His Work

Sigmund Freud may not have been the greatest psychologist of all time, but he made what is perhaps the greatest contribution to psychology.

Freud was born in Moravia, but had lived in Vienna from early childhood, and might have died there if the Nazi invaders had not robbed him of his worldly goods and insulted him so grossly, that further life in that city was impossible. He, with his family and several colleagues, took refuge in England, and died in London a few months later.

Freud was a Jew, and this fact was doubtless a potent cause of Nazi intolerance towards him. It is not unlikely that traits inherited from his Jewish ancestry were factors in enabling him to achieve the purpose he had set himself. His name will live as the discoverer of the unconscious, or rather he was the first to demonstrate the existence of an unconscious or subconscious mind in man, and showed how it might be rendered accessible to useful study and render possible the successful treatment of some mental conditions. He originated a new branch of science, under the name of psychoanalysis.

His final conclusion, after a thorough exploration and close investigation of the unknown and uncharted depths of the unconscious mind, was that the conscious mind is merely a reflection, in some respects distorted, of the inner and hidden personality; that our interests, ambitions, aversions, aspirations, and so on, the things which make up what we call the real world, are only surface emanations of this hidden personality. This unconscious mind has an inadequate relationship to the world of reality. While in close association with the fundamentals of life, the expressed thoughts of the unconscious when inhibitions are released, are as weird and fantastic as the delusions of the insane. There seems to be no reason in the wanderings of the unconscious mind. It is a place of conflicts, confused clashings and strivings between the inchoate wishes of one mind and the elements of the other mind, fear being the predominating feature. A cloak of reality may partially cover the conscious expressions of the impulses of the unconscious mind but they have only a mask of apparent rationality and, in a way, are symbols of our upsidedown world today.

Freud presented the human animal as rent asunder or deeply divided by inner conflicts which sometimes became transformed into outer conflicts, of which both sides are usually unconscious, the evidences being indirect disturbances of emotion and judgment. Freud gave the name of repression to a strong barrier which exerts an extremely powerful, almost impassable, resistance to recognition of what is passing in the unconscious mind.

Freud gained much of his clinical experience from the symptoms and dream-like phantasy life under narcotics and drew the conclusion that the unconscious mind, as the primitive mind of the child, is at one and the same time savage and "animal" and possesses stronger moral deterrent tendencies by far than man is aware of. "Man is both more moral and more immoral than he knows."

What has made Freud's name known far and wide is his study, and the deductions therefrom, of the sexual life, beginning with that of the child. Freud was the founder of the Psychoanalysis School in Vienna, of which Alfred Adler was a member. They parted company when Freud demanded that his associates accept without question his sexual theory. Seven others left Freud's circle and with Adler founded the Society for Free Psychoanalysis, afterwards named Society for Individual Psychology. Jung, the Swiss psychologist, also withdrew from Freud's circle and founded a new school. Charcot, of whom Freud was a pupil, threw the sexual theory of hysteria into disrepute. Janet emphasized its emotional causation, while Freud interpreted the mechanism of hysteria as the resultant of a psychic traumatism or nervous shock, of a sexual nature in the first instance, leading to morbid brooding and a kind of mental involution. As Garrison says in his *History of Medicine,* the interest of Freud was his profound insight into primitive mentality, or what Jelliffe calls "paleopsychology", the historic past of the individual psyche. He has given neurologists a new instrument for exploring unconscious states which in competent and temperate hands, may be effective.

Freud will deservedly go down to posterity as a great and original man of science. For many years he had suffered from a painful disease which he bore with stoic fortitude. Both the great Vienna psychologists, Freud and Adler, died in Britain.

News Items

Hektoen Lecture.—Dr. Joseph W. Beard, assistant professor of surgery, School of Medicine, Duke University, will deliver the twenty-first Ludvig Hektoen Lecture on March 23d, at the Palmer House, Chicago. The subject of the lecture will be "The Ultracentrifugal, Chemical and Electron Micrographic Characters of Purified Animal Viruses".

Hermann M. Biggs Memorial Lecture.—F. C. Bishopp, Ph.D., will deliver this year's Hermann M. Biggs Memorial Lecture at the New York Academy of Medicine, Thursday evening, April 5th. The subject of this lecture will be the Medical and Public Health Importance of the Insecticide DDT. Dr. Bishopp is assistant chief of the United States Department of Agriculture, in charge of the Research Bureau of Entomology and Plant Quarantine. The lecture is open to the general public.

L. Duncan Bulkley Lecture.—Dr. Fred W. Stewart, pathologist to the Memorial Hospital, New York, delivered the L. Duncan Bulkley Lecture at the New York Academy of Medicine, Friday afternoon, February 2d. His subject was Hormone Therapy and Human Mammary Cancer.

Association for Research in Nervous and Mental Disease.—Dr. William G. Lennox was elected president of this society at the annual meeting held on December 16th, and other officers were elected as follows: first vice-president, Dr. H. Houston Merritt; second vice-president, Dr. Wilder Penfield; secretary-treasurer, Dr. Thomas E. Bamford, Jr.

American Scientists Aid Egyptians in Tropical Disease Research.—Dr. Maurice L. Tainter, director of research, and Dr. Chester M. Suter, director of chemical research, Winthrop Chemical Company, Inc., have gone to Egypt, on the invitation of the Egyptian government, to assist in research on tropical diseases. They will spend several months abroad, and their work will include studies on malaria, schistosomiasis, and trachoma.

Mayo Memorial at the University of Minnesota.—The Medical School of the University of Minnesota will erect at a cost of two million dollars a twelve story building as a memorial to the late Drs. William J. and Charles H. Mayo, according to *Science*. A Mayo memorial fund has also been established to which may be credited private and public donations and appropriations.

Training for Hospital Librarians.—The School of Library Service at Columbia University will offer in the summer session of 1945 a program pertaining to work in hospital libraries, running July 2d to August 10th. This is in response to a growing demand, and to a prospective expansion of such work in governmental hospitals. Inquiries and requests for application forms may be addressed to the School of Library Service, Columbia University, New York 27, New York.

Conference on Oral Pathology.—The one hundredth monthly conference of the New York Institute of Clinical Oral Pathology will be held at the New York Academy of Medicine, Monday evening, April 30th. According to a preliminary announcement, the subject of the meeting will be "A Survey of the Antibiotic Problem." This will be discussed by members of the medical and dental professions from both the theoretical and clinical viewpoints. Members of medical, dental, public health, and other professional groups are cordially invited. For further information address all communications to the Executive Secretary, 101 East 79th Street, New York 21. A complete program will be published later.

Army Neuropsychiatric Nursing Schools.—Neuropsychiatric nursing schools are now in operation in five service commands and within the next few months will be established in all service commands in the United States. These schools offer a three-month, on-the-job training course under the country's leading neuropsychiatrists. Enrollment is made up of Army nurses who volunteer for the training and a certificate of neuropsychiatric nursing is awarded each on completion of the course. At least two neuropsychiatry nurses are assigned to each general hospital in this country and to the staff of each general hospital organized here for service abroad.

Personal.—Dr. Leverett D. Bristol has resigned as executive director of the Hospital Council of Greater New York on account of ill health. Dr. Bristol was formerly health director of the American Telephone and Telegraph Company.

Lieutenant Colonel Leon H. Warren, formerly of Philadelphia, has been appointed a member of the National Research Council, representing the War Department in the Division of Medical Sciences.

Lieutenant William F. Finn, M.C., U.S. Army, has been awarded one of the J. Whitridge Williams assistantships in obstetrics and gynecology recently established at the Cornell University Medical College, through a grant from the Rockefeller Foundation.

Dr. L. Everard Napier, formerly director of the School of Tropical Medicine, Calcutta, India, has been appointed a visiting professor at the New York University College of Medicine, for a period of two months.

Dr. Robert F. Watson, of the Hospital of the Rockefeller Institute for Medical Research, delivered a lecture on Friday afternoon, January 19th, at the New York Academy of Medicine, his subject being the Modern Concept of Rheumatic Fever.

Dr. Bruno Gebhard, director of the Cleveland Health Museum, is conducting a course at Western Reserve University College of Medicine to teach students the art of talking. The "how-to-speak-to-patients" course is being given for the first time and, in a statement to the press, it was reported that "the young physician should realize that the patient has a right to know what is happening to him with respect to his illness."

Dr. James Greenwood, Jr. has donated a fund to the University of Texas Medical Branch, Galveston, to establish the James Greenwood Lectureship in neurology and neurosurgery in honor of his father, Dr. James Greenwood.

Major John R. S. Mays, M.C., Baltimore, Md., has been appointed consultant in neuropsychiatry for the Burma Theater of Operations. Prior to his overseas assignment, Major Mays was chief of the neuropsychiatric section at McGuire General Hospital, Richmond, Va.

Lieutenant Colonel Rolland B. Sigafoos, M.C., Tacoma, Wash., who was recently awarded the Legion of Merit for his outstanding work in training and equipping the medical units for the entire new Chinese First Army, has been appointed deputy director of the Training Division, Operations Service, Office of the Surgeon General, replacing Lieutenant Colonel Charles H. Moseley, M.C., who has been assigned to duty overseas.

Colonel Joseph Shiang-min Lee, flight surgeon, Chinese Army, recently visited the Office of the Surgeon General, Washington, D.C., to confer with officers of the Training Division. Colonel Lee, who is a member of the faculty of the Chinese Army Medical College, Anshun, China, received his military medical training in this country, graduating as a surgeon from the School of Aviation Medicine at Randolph Field, Tex., in 1933, and from the Medical Field Service School, Carlisle Barracks, Pa., in 1934. Colonel Lee is now visiting Medical Department training installations to observe the recent advances which have been made in the military and professional training program of the Medical Department.

Research on Ocular Behavior.—According to *Science,* Yale University has received a grant from the American Optical Company in support of research on ocular behavior in the general program of the Clinic of Child Development in the School of Medicine. These studies are part of a systematic investigation of the ontogenetic development of behavior in infants and young children. They are being conducted by Dr. Arnold Gesell in close association with the guidance nursery and the diagnostic service of the clinic.

New York Cardiological Society.—At a regular meeting of the New York Cardiological Society, held on Wednesday evening, January 24th, Dr. Mandel E. Cohen presented the observations made in an investigation of neurocirculatory asthenia conducted at the Massachusetts General Hospital with the help of the Service Hospitals and the Harvard Fatigue Laboratory, by a group of scientists, headed by Dr. Cohen and which included Dr. Paul D. White, Dr. Stanley Cobb, Dr. Daniel W. Badal, Dr. Robert E. Joynson, and Dr. William P. Chapman. A general discussion followed. In a discussion of the heart and trauma, presented by Dr. Raphael Lewy, the causal relationship of trauma and cardiac disability was discussed, with a background of case histories and experience as the basis for discussion. This discussion was opened by Dr. Joseph Altman, Dr. Leopold Brahdy, Dr. Eugene Clark, Dr. Augustus Gibson, and Dr. Ernst B. Weiner.

Medical and Surgical Highlights of the War.—At a stated meeting of the New York Academy of Medicine, held in conjunction with the Section of Surgery, Thursday evening, February 1st, the program consisted of a panel discussion of medical and surgical highlights of the war. Medical highlights were presented by Brigadier General Hugh J. Morgan, chief consultant in medicine, Office of the Surgeon General, chairman; Colonel Irving S. Wright, consultant in medicine, Sixth Service Command, and Colonel George Garfield Duncan, consultant in medicine, Second Service Command, U.S. Army. The surgical highlights were presented by Dr. George J. Heuer, professor of surgery, Cornell University Medical College, chairman; Colonel Edward D. Churchill, M.C., A.U.S., Boston, Mass.; Lieut. Col. John H. Gibson, M.C., A.U.S., Philadelphia, and Major Champ Lyons, M.C., A.U.S., Boston.

Marcelle Awards for Allergy Research.—Dr. Jonathan Forman, executive director of the seventh annual Forum on Allergy, held recently in Pittsburgh, Pa., has announced the recipients of the awards made by Marcelle's Cosmetics, Inc., in recognition of the most meritorious contributions to clinical allergy during the past year. The first prize, consisting of three hundred and fifty dollars, was won by Dr. Mary Loveless, New York, and the second prize consisting of one hundred and fifty dollars went to Dr. Charles F. Code, of the Section on Clinical Physiology of the Mayo Foundation, Rochester, Minn. Dr. A. R. Rich, Johns Hopkins University, and his associates received honorable mention for their work on serum sickness and periarteritis, as did also Dr. Frank Simon, Louisville, Ky., for his studies of the allergens in human dander.

For several years now the annual forums on allergy have given a gold medal in recognition of a life's work in the field. This year the medal went to Dr. Milton J. Rosenau, Charles Wilder professor of preventive medicine and hygiene, emeritus, Harvard University.

Book Reviews

Medical Diagnosis

Medical Diagnosis. By ROSCOE L. PULLEN, A.B., M.D., instructor in medicine, Tulane University of Louisiana School of Medicine, etc. With a foreword by JOHN H. MUSSER, B.S., M.D., F.A.C.P., professor of medicine, Tulane University of Louisiana School of Medicine, etc. Illustrated. Philadelphia and London: W. B. Saunders Company, 1944. Pp. 1106. Price $10.00.

There has always been a need for a book on medical diagnosis which will explain, epitomize, and summarize the complete examination of a sick person. Most of the books on diagnosis are relatively elementary; they instruct the student in what he may learn by inspection, how he can percuss and how he can auscult, but the detailed information in the examination of the patient from all other angles is minimal. Examination of the skin, eyes, and pelvis, and the psychiatric examination are completely neglected. The various sections are prepared by a group of contributors who are well qualifed to describe what they know about the examination of the particular sections of the anatomy, and the psyche, assigned to them.

To the student and to the physician this work on applied diagnosis should be of inestimable value. In the case of the neophyte student, he can make use of the book in his courses in diagnosis and in clinical medicine; to the older man who is puzzled by some unusual finding, the book will be an excellent reference work which he can consult to help him solve his perplexities. In every respect it would appear that *Medical Diagnosis* should be a valuable work to place on the most accessible book shelf of the physician, where he can reach it at a moment's notice to obtain the information he may need when he has a puzzling case.

The Human Voice

The Human Voice. A concise manual on training the speaking and singing voice. By FRANKLIN D. LAWSON, M.D. (Columbia University), formerly tenor soloist with the Dresden Philharmonic, the Metropolitan Opera Association, and other similar organizations. Illustrated. New York and London: Harper and Brothers, 1944. Pp. 94. Price $2.50.

For many years Dr. Lawson practiced medicine. Then, because of great demands upon his time as a tenor soloist, he devoted his life to a study of the singing and speaking voice; and, to attest the excellence of his method, he still sings although in his seventh decade!

This little primer contains all that anyone needs to know about "production". Dr. Lawson rightfully stresses the importance of singing correctly the vowel sounds, six of them,—namely, E, A, AH, AWE, OH and OO, and illustrates the mouth and lip positions by photographs of a pupil "in action". He is so sure of the practicality of his work that he says: "Anyone may develop and strengthen the resonance and carrying power of the voice, beautify its quality and appeal, and speak or sing with perfect enunciation and diction". Breathing, that bugaboo upon which some teachers have built their "own method" of voice production, he conceives to be a very simple process. "It may be acquired by anyone who will learn a few simple rules and practice the necessary simple exercises".

Control of the air column as it leaves the lungs is the all important desideratum, not the exhalation of a vast volume. To watch some of the great *heldentenor* at work on one of the difficult passages of a Wagnerian opera, you can be sure they would not approve of the above, but in all probability they never heard of it anyway.

Dr. Lawson's dicta as set down in his "Manual" are sound, and, more important still, they are safe. No harm can possibly come to any voice if these precepts are followed. There are many, many books on "Voice". Of very few of them can *safety* be acclaimed. This is a splendid guidebook and deserves a wide following.

Medical Practice

The Practice of Medicine. By JONATHAN CAMPBELL MEAKINS, M.D., LL.D., Brigadier, Deputy Director General of Medical Services, Royal Canadian Army Medical Corps, professor of medicine and director of the department of medicine, McGill University, etc. Fourth edition. With 517 illustrations including 48 in color. St. Louis: The C. V. Mosby Company, 1944. Pp. 1444. Price $10.00.

This new edition reveals the tempo of the times with all its accelerated acquisition of knowledge applicable in peace as well as in war. Introduction of sulfonamides, penicillin and other therapeutic agents, recognition of traumatic shock in its early stages, the problem of combating malaria, the crush syndrome, emersion foot, hepatorenal syndrome, atypical jaundice, blast injuries are all brought to the fore because of their occurrence in rapid succession or en masse in the army. The author also re-emphasized the concept of preventive versus therapeutic medicine and psychosomatic processes in attaining positive health. The format of the text follows previous editions but the content is more realistic. Each group of diseases is evaluated succinctly from the standpoint of the physician at the bedside and effective therapy formulated according to current concepts of pathology and physiology. The book is refreshing, stimulating and practical for both practitioner and student.

Clinical Syphilology

Modern Clinical Syphilology. Diagnosis, Treatment, Case Study. By JOHN H. STOKES, M.D., professor of dermatology and syphilology, and HERMAN BEERMAN, M.D., assistant professor of dermatology and syphilology, School of Medicine and Graduate School of Medicine, University of Pennsylvania, and NORMAN R. INGRAHAM, JR., M.D., assistant professor of dermatology and syphilology, School of Medicine, University of Pennsylvania. Third edition with 911 illustrations. Philadelphia and London: W. B. Saunders Co., 1944. Pp. 1332. Price $10.00.

In addition to the above-mentioned authors the names of eight "instructors" appear on the title page. The work, therefore, represents the combined efforts of a group. In this edition the original purpose has been adhered to; namely, to produce a single volume, encyclopedic in nature, factually authoritative and up to date. Since the advent of penicillin, there has been some confusion as to the advisability of continuing the mercurials and arsenicals. The authors think that another ten years will be required to draw definite conclusions. Chapter 24, the final chapter sums up in some thirty pages all we know about "the current developments—penicillin". The data are complete up to July 1944, and all available information is summarized in tabular form as well as textually; for example, serologic results of penicillin treatment; penicillin for the practitioner; penicillin in syphilis,—the known and the unknown; the spinal fluid under penicillin; symptomatic neurosyphilis under penicillin; penicillin panel investigation; clinical course of seven pregnant women with early syphilis treated with penicillin; and gross overall results of penicillin treatment in early syphilis (as of August 1st 1944).

It is obvious that definite conclusions should not be drawn as to the *permanent* "cures" which have been recorded. Syphilis is an insidious, treacherous, persistent, cell-destroying disease, which may give few symptoms, or no symptoms, or symptoms and signs which are so confusing that the most astute clinician may be misled. It is questionable whether anybody can live long enough to *know* syphilis in all its varying phases, but in sight is "the impending extinction of a centuries-old plague in the short space of two decades". That is, indeed, a great achievement. This book seems to include everything that has been said and written concerning the world's worst scourge.

Human Fertility

Fertility in Women. Causes, Diagnosis and Treatment of Impaired Fertility. By SAMUEL L. SIEGLER, M.D., F.A.C.S., attending obstetrician and gynecologist, Brooklyn Women's Hospital, etc. With a foreword by ROBERT LATOU DICKINSON, M.D. With 194 illustrations, including forty subjects in full color on seven plates. Philadelphia, London and Montreal: J. B. Lippincott Company, 1944. Pp. 450. Price $4.50.

The splendid foreword by the master, Dr. Dickinson, offers a statement of the problem of fertility and its opposite, barrenness, sterility and infertility. The book concerns itself with the simple and the difficult in this field. The modern theories are explained but the superstitions of the past are not forgotten. The interrelation of the pituitary and gonad is explained. The colored charts of the text and the black and white line drawings aid the reader in visualizing the facts. Each physician will find something worthy of review of the old, and something to learn of the new. The time of ovulation and its relation to menstruation and conception have occupied the attention of physician and patient. This book offers excellent material on the subject. The vaginal smear method of estimating ovarian activity is described. The treatment of sterility occupies the author for many chapters. Some of the ideas are available to all physicians—some methods are restricted to specialists.

Fertility in Men. A Clinical Study of the Causes, Diagnosis, and Treatment of Impaired Fertility in Men. By ROBERT SHERMAN HOTCHKISS, B.S., M.D., Lieutenant Commander, (M.C.) U.S.N.R. (on active service), etc. With a foreword by NICHOLSON J. EASTMAN, M.D., chairman, editorial committee, National Committee on Maternal Health, etc. With ninety-five illustrations. Philadelphia, London and Montreal: J. B. Lippincott Company, 1944. Pp. 216. Price $3.50.

This book, a companion piece to *Fertility in Women*, offers the adverse of the problem discussed by Siegler. The idea of a male sterility clinic made it possible to have a celebrated staff of consultants cooperate in the work leading to the material in the book. It is an excellent review. Any physician can benefit from a perusal of this book because it will stimulate him to help his patients. And, apparently, more men are interested in their ability to reproduce their kind than is usually recognized.

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FEBRUARY 1945

Medicolegal Notes

Mental Incompetency from Drunkenness and Drugs

In an action for disability benefits under life and indemnity policies judgment for the plaintiff was reversed and no new trial granted. It was held that the insured's mental incompetency, because of drunkenness and the use of drugs, did not furnish proper evidence that he was "totally and permanently disabled by bodily injury or disease" within the provisions of the policies, nor excuse his failure to pay premiums falling due during the period of such incompetency. Gaines v. Sun Life Assur. Co. of Canada, 306 Mich. 192, 10 N.W. 2d 823.

Review of Revocation of License Order

In a mandamus proceeding to review an order of a board of medical practitioners revoking a drugless practitioner's license to practice as such, the California District Court of Appeal, King vs. Board, 151 P. 2d 282, holds that, since the court will not control the board's discretion if fairly and honestly exercised, it is incumbent upon the practitioner to allege and prove that the act complained of was an excess of jurisdiction, arbitrary, capricious, fraudulent, or an abuse of discretion, or that it was a breach of duty, or one taken without regard to the practitioner's "right". The question to be determined by the court is whether the practitioner has been unlawfully and unfairly denied a "right" to which he is entitled under the law. Where, in such a mandamus proceeding, a trial *de novo* as understood in the California courts (Dare vs. Board of Medical Examiners, 21 Cal. 2d 790, 136 P. 2d 304) has been conducted and the trial court determines that the proceedings before the board were fair and impartial and that the order complained of was not vulnerable upon any of the grounds pleaded, the judgment of the trial court should be an affirmance of the order. Otherwise the order should be annulled or vacated, so that the judgment may compel the admission of the party to the use and enjoyment of the right of office to which he is entitled by the statute.

Permanent Disability

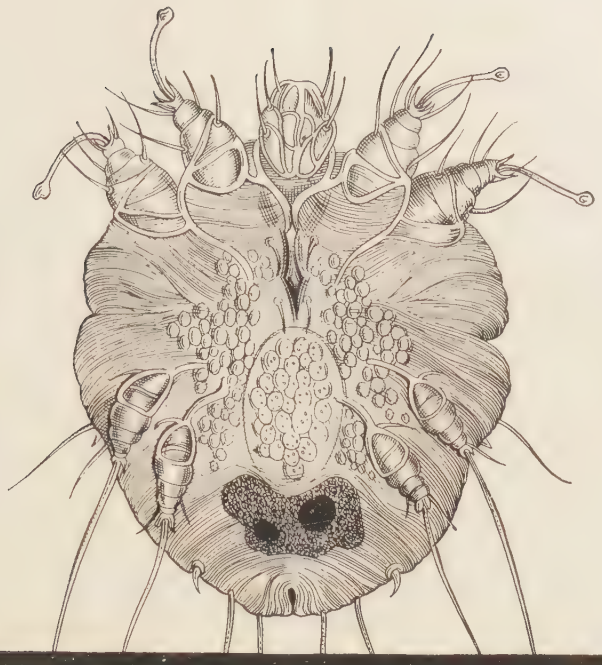
In an action on a life policy providing disability benefits if the insured was permanently, continuously and wholly prevented from performing any work for compensation, gain or profit, and from following any gainful occupation, it was held that the evidence of insured's disability was sufficient to carry the case to the jury and judgment for the plaintiff was affirmed. Mutual Life Ins. Co. of New York v. Bryant, Kentucky Court of Appeals, 177 S.W. 2d 588.

Use of "Dr." as a Title

The purposes of the California statute, St. 1939, p. 1682, Sec. 2409, relating to the use of the title "Dr." are to require a person who is licensed under any medical practice act to use the word "doctor" in relation to a profession other than that of a physician or surgeon to indicate the kind of certificate he holds and to prevent misrepresentation and fraud. There was no intention of the legislature to appropriate the titl "doctor" or the prefix "Dr." to the exclusive use of licensed physicians and surgeons. "Thus we have doctors of law, doctors of philosophy, and many other types of doctors who are not licensed under any medical act and therefore not included in this section." King vs. Board of Medical Examiners, California District Court of Appeal, 151 P. 2d 282, 285.

Continuance of Disability

In an action to recover on a total disability provision in an accident policy, judgment for the plaintiff was affirmed, Christy v. Great Northern Life Ins. Co., Kansas City Court of Appeals, 181 S.W. 2d 663, holding that the insured, in proving his case, was not confined to the theory that he was suffering from anesthesia, there being testimony that the anesthesia was due to a nerve injury. There had been prior action for disability benefits under this policy. In the first action, insured had recovered benefits covering an earlier period. The insurance company could not avoid the effect of the prior judgments as *res judicata* on the ground that the insured's condition was traumatic neurosis and that, being imaginary, there was no presumption that such condition would continue. The present action was held to be a continuing cause of action, and the only matter to be litigated was whether the disability had continued over the period covered by the second action, the former judgment, being not only conclusive upon issues actually litigated, but also those that might have been litigated.



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No longer are slow, greasy ointments with their attendant messiness necessary to treat scabies. In their stead has come quick, easily applied, highly parasiticidal benzyl benzoate emulsion. • • • Writes Mackenzie[1]: "The ease and speed with which the application can be carried out . . . rapidity of cure, and the almost immediate relief from itching combine to make it a satisfactory remedy from both the clinical and the public health aspects."

'WELLCOME' BENZYL BENZOATE EMULSION 50%

Application: Following a thorough soap and water bath, the emulsion (diluted to 25%) is painted on the entire body, allowed to dry, and then reapplied. A warm bath, 24 hours later, completes the treatment. Bottles of 4 fluidounces and ½ gallon.

1. Mackenzie, I. F.: Brit. M. J. 2:403, 1941.

Literature on request

'Wellcome' Registered Trademark

BURROUGHS WELLCOME & CO. (U. S. A.) INC., 9-11 E. 41st St., New York 17, N.Y.

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No other commercial fluid can be described as follows: Refreshing; composed only of C.P. salts normal to body fluids; chemical components stated on the label; neutral when first used, alkalinity developed metabolically; alkalinity not due to a single salt, but to several. Bacteriologically pure, assured by frequent laboratory reports. Indicator paper and pH chart for use in sulfa medication sent gratis on request.

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TRUTH OF THE MATTER

Where Will the Food Come From?

T. SWANN HARDING
Falls Church, Va.

Our food needs will increase as the war goes on. Can we continue indefinitely to increase our production of meat animals, milk, and eggs? No, we cannot. Already our feed supplies are under heavy strain.

Farmers were asked to hold the 1943 fall pig crop to a level only fifteen percent above 1942. Last year Congress authorized the Commodity Credit Corporation to sell 225,000,000 bushels of the wheat it held for feed. The final hundred million bushels went at a rate of one and one-half million bushels a day. Today there is no more wheat to sell to livestock growers, though during the last World War no food wheat at all was used for such purposes.

The actual fact is that we cannot greatly increase our production of food *within the present pattern of farm output*. Neither can we increase acreage much without widespread soil damage. Hence, the sole alternative is to change the composition of our farm output and somewhat revise our diets. This means that we must, like other thickly populated countries, veer somewhat away from animals and towards vegetables for the required human food elements.

At the same time we must increase our output of farm products which make the most efficient use of farm resources like feed, land, labor, fertilizer, and

IN DISORDERS OF GASTRIC FUNCTION

Gastron
REG. U.S. PAT. OFF.

GASTRON is an original extract of the organic and inorganic constituents of the entire mucosa of the hog-stomach, including the pylorus. The acidified and aromatized extract is incorporated in an aqueous-glycerin menstruum which preserves the enzymatic activity. The preparation contains no alcohol. It is accurately standardized by assay.

GASTRON is indicated as replacement therapy in atrophic gastritis, and as an aid in the treatment of chronic gastritis. It is of value as **adjunctive treatment in the anemias, and in certain gastric deficiencies associated with convalescence and old age. It is worthy of trial in the nausea and vomiting** of pregnancy.

***GASTRON WITH IRON* also is available for prescription use**

FAIRCHILD BROTHERS AND FOSTER
70-76 Laight Street, New York 13, N.Y.

This is one of a series of historical notes, highlighting important achievements in Vitamin Research. Illustration is from unretouched photo-micrograph taken in 1944.

1936 . . . THIAMIN COMES OUT OF THE LABORATORY ☆

Although vitamin B_1 deficiency was first produced experimentally in the Dutch East Indies in 1897, it was not until almost 40 years later that thiamin was successfully produced in the laboratory. After a quarter of a century of intense study by investigators in many parts of the globe, this antineuritic substance was at last isolated in Amsterdam, and analysis of its chemical nature completed. Then in 1936, in a laboratory in New York, came the real triumph—final synthesis of thiamin or B_1. This made the crystalline substance available in pure form, at low cost, and opened up the field for thorough clinical study of its function in the human body.

Two VI-TEENS Super Potency vitamin tablets daily, supply 8 milligrams of vitamin B_1, or 800% of the minimum adult requirement. The potency of this and all other ingredients is carefully guarded by scientific control in the modern laboratory where VI-TEENS are formulated.

VI-TEENS Super Potency vitamin tablets are especially recommended in cases of avitaminosis where an unusually high dosage of additional multiple vitamin intake, particularly with reference to thiamin, riboflavin, and pyridoxine, is indicated. Regular size package on request.

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In addition to our own clinical tests, over 15 years of successful use by the medical profession prove that in hypothyroidism, ITHYPHEN is a highly effectual reducing medication without undue toxic by-effects.

Samples and literature on request. Kindly enclose your professional card or letterhead.

Prescribe
ITHYPHEN
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machinery. The value of each food product must also be measured in terms of essential nutrients.

If we arbitrarily set up an abstract value, a nutritive unit, which may be used to evaluate a food in terms of protein, food energy, fat, calcium, iron, vitamin A, vitamin C, thiamine, riboflavin, and niacin, we get some interesting results. On this basis it is possible to evaluate a unit quantity of any product selected. When that is done, soybeans come out so far ahead of every other food for human use that the also-rans are way behind!

Hogs, the best of the lot of animal sources, do only half so well as soybeans in producing human nutriment, and rank with whole-wheat flour and carrots. Even dried beans do better than any livestock product. Among the latter, laying hens rank next to hogs for efficient human-nutriment production, but cattle and sheep are high farm-resource-using commodities.

What does this mean in terms of our wartime diet, and of the diet we must use for a while after peace comes, at least until liberated countries become able to feed themselves? It probably means large increases in our consumption of leafy green and yellow vegetables, potatoes, sweet potatoes, dry beans, dry peas, nuts, soybeans, tomatoes, citrus fruits, and whole-milk products, and significant reductions in our consumption of sugar, meats, and animal fats.

The food energy for which we have been in the habit of depending upon the three last-mentioned foods can be supplied much more efficiently by cereals and other crop products. But, in substituting, we must pick foods that will give us sufficient of the nutritive elements without having to be consumed in

The Return to Normal After

SEVERE COLDS or INFLUENZA

Should be accelerated by prescribing GRAY'S COMPOUND as an adjunct to such special treatment as your patient requires. The Bitter Tonic action of GRAY'S COMPOUND helps improve the patient's appetite; the carminative effect relieves the flatulence of inaction. Simple coughs, an aftermath of the infection, should be relieved, giving the patient a more comfortable convalescence.

GRAY'S COMPOUND

• • • • • • **is also a useful time-proven adjunct in treating the AGED · POSTOPERATIVE PATIENTS · CONVALESCENTS · the RUN-DOWN and the OVERWORKED.**

ACTIVE INGREDIENTS: Extracts of Gentian and Dandelion, Wine, Glycerine, Phosphoric Acid, Tr. Cardamom Comp. and aromatic elixir syrup.

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For the symptomatic relief of sinusitis

In relieving the discomfort which almost invariably accompanies acute sinusitis, the striking success of Benzedrine Inhaler, N.N.R., is as logical as it is gratifying:—

The Inhaler's vasoconstrictive vapor diffuses evenly throughout the upper respiratory tract, opening sinal ostia and ducts which are frequently inaccessible to liquid vasoconstrictors. The sinuses drain. Headache, pressure pain, "stuffiness" and other unpleasant sinusitis symptoms are relieved.

ACCEPTED AMERICAN MEDICAL ASSN. Council on Pharmacy and Chemistry

A Better Means of Nasal Medication

Benzedrine Inhaler

Each tube is packed with racemic amphetamine, S.K.F., 200 mg ; oil of lavender, 60 mg.; menthol, 10 mg.

Smith, Kline & French Laboratories, Philadelphia, Pa.

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Estrogenic
Deficiency

GLOVARIAN
(Natural Estrogenic Substance and Glycerin Ovarian Extract—Schieffelin)
PILLS

In the treatment of distressing menopausal symptoms, amenorrhea and functional dysmenorrhea Glovarian Pills represent an oral estrogen of proven clinical value.

Glovarian Pills are available plain and combined with Thyroid — also with Anterior Pituitary.

Literature and sample on request

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enormous quantities, or without too great an increase in our total food energy.

Suppose we need ten percent more calcium in our national food supply. That could be supplied by increasing our consumption of whole-milk products only fourteen percent. At the same time this would increase our energy intake only two percent, but would give us fourteen percent more excellent protein. If that additional calcium had to be supplied by grain products, our intake of them would have to be increased two hundred percent, and our food-energy intake would increase fifty-four percent in the bargain.

Suppose again that we wanted to increase our consumption of protein ten percent to replace a decrease in meat proteins consumed. We should have to eat a thousand percent more tomatoes and citrus fruits if we depended upon them for this increase. That is an impossible substitution. It would be quite as absurd to depend upon leafy green and yellow vegetables for a ten percent increase in fat in our diet, as we should have to step up our consumption of them more than one thousand percent.

Dried beans and peas, and other vegetables and fruits, may be relied upon somewhat more for calcium than in the past, though our consumption of milk products should also be increased, which will be difficult under wartime conditions. Dried beans, whole-wheat flour, oats, and onions are efficient sources of phosphorous; these foods, along with spinach, beets, kale, carrots, and grapes, will supply plenty of iron.

Carrots, kale, spinach, and sweet potatoes are especially rich in vitamin A, though peaches, cantaloupes, tomatoes, and watermelons do quite well. Important

VM. No. 2C

For clinical deficiency or preventive therapeutics indicating Vitamin C, VM. No. 2C supplies 333% of the daily requirements of Vitamin C, also 100% of Vitamins A, B_1, B_2 and D, together with 3000 Micrograms of Vitamin E and 4000 Micrograms of Niacin with natural factors of the B Complex, in a concentrate of fifteen fresh vegetables.

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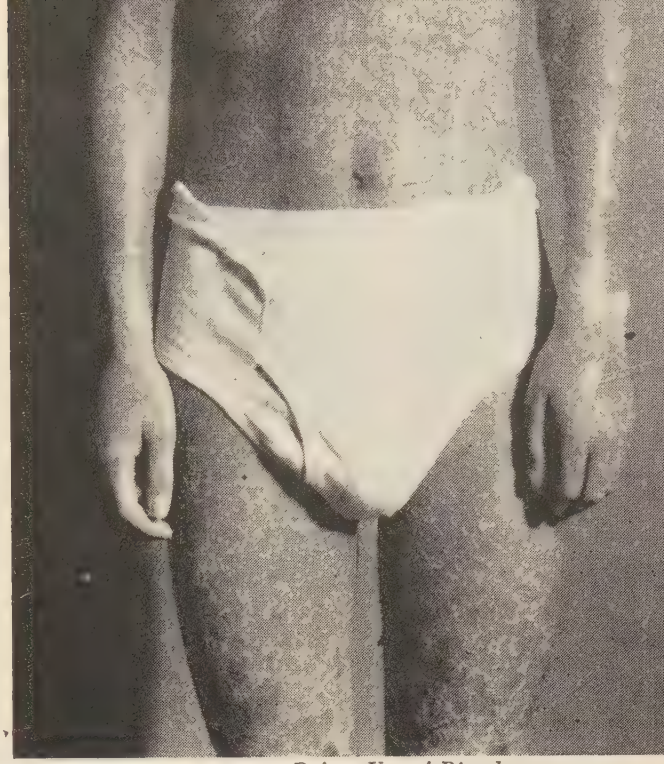
Psoriatic therapy *must* produce results. Ugly, disfiguring lesions *must* vanish to afford any treatment professional recognition.

RIASOL, because it *does* produce results, has earned recognition on the sole valid basis—*visible proof of performance.*

RIASOL contains 0.45% mercury chemically combined with soaps, 0.5% phenol and 0.75% cresol. This formula is so effective that a *thin film*, invisible and economical, is sufficient. Patients require no bandaging and remain fully ambulant.

To apply RIASOL, bathe affected parts with a mild soap and dry thoroughly. Apply daily for one week, then adjust to the patient's progress. RIASOL may be safely used on any part of the body, including face and scalp.

RIASOL is not advertised to the laity. Available in 4 and 8 fld. oz. bottles, at pharmacies or direct.



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After Use of Riasol

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MR-2-45

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Please send me professional literature and generous clinical package of RIASOL.

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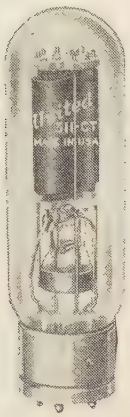

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• Available for replacements in most standard makes of machines, under provisions of War Production Board Order No. L-265.

Since 1936, UNITED Tubes have been standard initial equipment in most of the leading makes of short wave diathermy machines.

Write for descriptive folder and tube replacement guide, for correct selection of type required for your machine. (There are 12 different types.)

Available at your surgical supply house or radio parts distributors.

UNITED ELECTRONICS COMPANY
NEWARK 2 • NEW JERSEY

sources of vitamin C are cabbage, grapefruit, oranges, spinach, cauliflower, sweet potatoes, potatoes, and tomatoes. We may derive more of our riboflavin, thiamine, and niacin from whole-grain cereals, potatoes, dried beans and peas, soybeans, kale, carrots, apples, oranges, and leafy green and yellow vegetables, and less from meat, poultry, milk, and fish than heretofore.

We can, indeed, live very well and suffer no lack of any important nutritive element, merely by changing our pattern of farm food production and somewhat altering our choice of foods. This we can do without hardship or physical deterioration. It is just like a new way of expanding farm production without expanding the acreage cultivated. Moreover, this diet is the cheapest to produce in terms of total farm resources—land, labor, and equipment—utilized.

That is the only way in which we can stretch our farm resources to produce the food required by our much increased population. This will call for a considerable change in our diet. Many of us will find the new diet more monotonous and less palatable for a while, but the human appetite gradually conditions itself to food novelties. We raise some three hundred crops for human food, as compared with six thousand the Chinese cultivate. We have much to learn.

We shall probably continue to demand irreducible quantities of high resource-requiring foods over and above our actual nutritive requirements and although the nutrients could be produced far more efficiently in substitute plant products. That's the way we humans are. Nevertheless, we must in the very near future turn more to the most efficient rather than to the most prized food-producing crops.

Through The Menstrual Years of Life-

THE frequency with which the menstrual life of so many women is marred by functional aberrations that pass the borderline of physiologic limits, emphasizes the importance of an effective tonic and regulator in the practicing physician's armamentarium.

In Ergoapiol (Smith), the action of *all* the alkaloids of ergot (prepared by hydro-alcoholic extraction) is synergetically enhanced by the presence of apiol, oil of savin, and aloin. Its sustained tonic action on the uterus provides welcome relief by helping to induce local hyperemia, stimulate smooth, rhythmic uterine contractions, and serve as a potent hemostatic agent to control excessive bleeding.

May we send you a copy of the comprehensive booklet "The Symptomatic Treatment of Menstrual Irregularities."

MARTIN H. SMITH COMPANY
150 LAFAYETTE STREET, NEW YORK

INDICATIONS
Amenorrhea, dysmenorrhea, menorrhagia, metrorrhagia, in obstetrics.

ERGOAPIOL
••THE PREFERRED UTERINE TONIC••

DOSAGE
1-2 cap. 3-4 times daily.

SUPPLIED
In ethical pkgs. of 20 cap.

Fit at Fifty

Middle age to most men means the peak of their business and social careers. To meet these responsibilities, it should also mean the peak of their physical and mental efficiency.

Easy fatigability, exhaustion, insomnia, increasing indecision and irritability, as well as vasomotor, cardio-vascular, and genito-urinary disorders are often symptoms of endocrine imbalance during the male climacteric.

In the male climacteric, Oreton* may be given intramuscularly until symptoms are controlled. Therapy may usually be maintained with Oreton-M* Tablets or Oreton-M Ointment.

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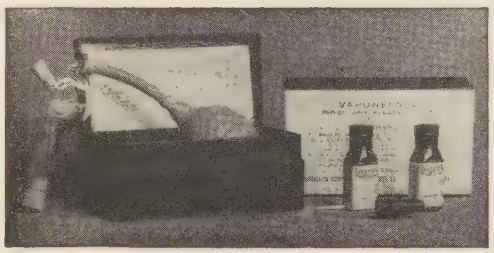

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THE INHALATIONAL HAND-BULB METHOD

Advantage:

In many cases VAPONEFRIN has shown marked improvement in a short time. The technique is simple; relief is rapid with relative freedom from side effects.

Doctor:

For your allergic patients, allow VAPONEFRIN to solve your problem in even your most troublesome cases.

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Penicillin Treatment of Yaws

The Surgeon General's Office, in cooperation with the Office of the Coordinator of Inter-American Affairs and the Army Epidemiological Board, has organized a joint project in Haiti to study the effect of penicillin in the treatment and control of yaws. Yaws is endemic in certain sections of Haiti and the large number of cases afford an excellent reservoir of clinical material for study.

Lieutenant Colonel T. H. Sternberg, M.C., director, venereal disease control division, preventive medicine service, Office of the Surgeon General, who has had considerable experience with penicillin, went to Haiti this month to cooperate with the American Sanitary Mission of the Coordinator of Inter-American Affairs, under the direction of Lieutenant Colonel James H. Dwinelle, M.C., chief of group, in initiating the project there. He was accompanied by Major Charles R. Rein, M.C., serologist from the Army Medical School. The following week Brigadier General James S. Simmons, U.S.A. chief of preventive medicine service and Major Douglass W. Walker, M.C., executive officer, visited the group in Haiti to observe the progress of the project and to assist in the development of plans for its continuation. Also with the group in Haiti were Captain Ralph P. Creer, and Corporal Bruno Mickeleit of the Medical Arts Service of the Army Medical Museum.

Francois Henry Hallopeau, a pupil of Vulpian and Janoud, described dermatitis vegetans before the International Congress of Dermatology in 1889. The disease has since been known as Hallopeau's disease. He also described lichen planus sclerosus and acrodermatitis continua..

Periodic physiologic "let-down" in women is likely to be more pronounced during these days of added stress and strain unless effective therapy is instituted.

HYPEROL

provides a balanced formula of established value for symptomatic control of certain functional utero-ovarian irregularities. HYPEROL acts to relieve pain, reduce congestion, and to improve general well being through hematinic benefits . . . . so that normal activities may be pursued.

HYPEROL

in Utero-Ovarian Irregularities

contains Hydrastine Alkaloid, Aloin, Apiol, and Ferrous Carbonate (Blaud).

Samples to Physicians Upon Request.

The Purdue Frederick Company

Makers of Gray's Compound

135 Christopher Street, New York 14, N.Y.

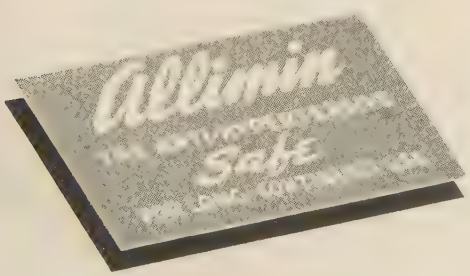
Rainbow in the Sky

To many a patient bedeviled by hypertension's distressing symptoms, the administration of ALLIMIN is as heartening as "a rainbow in the sky." In more than 80% of cases, ALLIMIN produces a gradual yet sustained lowering of both systolic and diastolic pressure, and, in nearly 100% of cases, alleviates the associated symptoms—headache, tinnitus and dizziness.

ALLIMIN'S principal ingredient, Allium sativum, has won the recognition of the medical profession as an effective, *safe* anti-hypertensive suitable for *long-continued* use. Since prolonged treatment is generally required in hypertension, it is important to know that ALLIMIN is free from toxic or otherwise deleterious drugs, causes no undesired side-effects or harmful after-effects, has no incompatibles and no contraindications.

ALLIMIN Tablets are enteric coated, tasteless and odorless. Each tablet contains 4.75 gr. dehydrated garlic concentrate and 2.37 gr. dehydrated parsley concentrate. The minimal dose is 2 tablets with water, after meals, t.i.d. Intermittent courses of administration, skipping every fourth day, recommended.

Supplied in packages of 60 and 250 tablets, ALLIMIN is advertised exclusively to the medical profession. For clinical sample and covering literature, sign and mail the coupon.



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Please send professional sample of ALLIMIN and covering literature.

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ENDOTHYRIN

Thyroid extract
(thyroglobulin)

Dependable potency
(iodine 0.62%)

Lower toxicity
(better tolerated--less heart-stimulating effects)

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The HARROWER LABORATORY, Inc.
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EFFECTIVE THERAPY
IN
Otitis Media
Requires Analgesia-Bacteriostasis, and Dehydration of the Tissues.
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THIODRYL
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ARTHRITIS THERAPY
INTRAMUSCULAR • INTRAVENOUS
Detoxifying and alterative agents combined with systemic therapy.
INCREASED MOTILITY—DIMINUTION OF PAIN
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ORGANIDIN—WAMPOLE
A STABLE PREPARATION OF IODINE
IODINE
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Freely miscible with water. Contains no free iodine, no hydriodic acid, no inorganic iodides and no alcohol.

ORGANIDIN is absorbed readily from the gastro-intestinal tract, with less irritation and less toxicity than is produced by elementary iodine. Thus it permits a maximum effect with a minimum iodine dose.

A superior product which may be administered over an extended period of time with little probability of causing gastro-intestinal disturbances or iodism.

SUPPLIED IN 1-OZ. BOTTLES

MADE SOLELY BY
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Tuberculosis Control

Chadwick and Pope, in *The Modern Attack on Tuberculosis*, state that experience everywhere has shown that the stage of tuberculosis on admission to a sanatorium is the most important single factor in its prognosis, while recognition of tuberculosis before it has reached the infectious stage is the only certain way of checking the spread of the disease within the family group. No history of exposure to tuberculosis can be obtained in more than one-half of all diagnosed cases. This fact is sufficient indication that any well-balanced program for tuberculosis control must include other comprehensive diagnostic procedures, such as mass examination of specially susceptible groups.

Dr. W. A. Sawyer, writing in the *New York State Journal of Medicine*, Jan. 15, 1943, says that now more than at any other time, because of the pressure of work, longer hours, and crowded and unsatisfactory living conditions, there is reason for extra precaution so far as tuberculous infection is concerned, both in large and small industries. Many individuals will have to be employed whose health is substandard and who should be considered more susceptible to such infection. Therefore, there should be more effort made to extend and maintain proper helath supervision, especially in regard to the detection and control of tuberculosis.

Sir William Jameson, writing in the *Lancet*, Oct. 24, 1942, says that early detection of tuberculosis is not enough. There must be adequate institutional accommodation for those who need it: reasonable maintenance for the family whose wage-earner is undergoing treatment and a wisely planned scheme of rehabilitation are recognized as an essential part of treatment itself.

IS SODA-BICARBONATE NECESSARY IN SALICYLATE THERAPY

ACCEPTED AMERICAN MEDICAL ASS'N Council on Pharmacy and Chemistry
RARE CHEMICALS

Tablets, 5 grains, bottles of 50, 250, 1000
Powder, 1 oz. bottles

To be effective, the treatment of acute rheumatic fever must maintain a high salicylate level in the blood.[1] When massive doses of sodium salicylate are given by mouth, an undesirable side effect—gastric distress—is frequently encountered. To relieve this effect, equal amounts of sodium bicarbonate are given. Unfortunately, a decided depression of the blood salicylate level results.[2]

Gastric distress and its required relief by sodium bicarbonate are avoided when Salysal is given, for Salysal is not soluble in the acid medium of the stomach. Furthermore, 100 parts of Salysal provide 124 equivalent parts of sodium salicylate.[3] Thus, smaller doses accomplish the same effect.

Literature and sample on request

SALYSAL

FOR A TRULY POWERFUL SALICYLATE THERAPY

1. Coburn, A. F.: Salicylate Therapy in Rheumatic Fever, Bull. Johns Hopkins Hosp. 73: 435-464 (Dec.) 1943.
2. Smull, K., Wégria, R., and Leland, J.: The Effect of Sodium Bicarbonate on the Serum Salicylate Level, J.A.M.A. 125: 1173 (Aug. 26) 1944.
3. New and Nonofficial Remedies, 1943, p. 57

RARE CHEMICALS, INC., HARRISON, NEW JERSEY

Fatal Firearm Accidents Among Children

Here in our own country, far from the battlefront, firearms take a heavy toll, averaging in the neighborhood of two thousand five hundred civilian lives annually, according to statistics compiled by the Metropolitan Life Insurance Company (*Stat. Bull.*, Nov. 1944). These figures show that a surprisingly large number of the victims are children, many of them fatally shot in their own homes. In 1942, the last year for which official figures are available, gunshot wounds killed 671 boys and girls under fifteen years of age; of this number ninety-four were under five years of age, and of these nine were infants. While it is true that the toll among children was somewhat higher in 1942 than in most years, the number in ordinary years runs upward of five hundred deaths.

Information available from the death claim records of 137 children insured in the Metropolitan Life Insurance Company, who died from accidental gunshot wounds in 1942 or 1943, shows that most of the children killed in such accidents were injured in their own homes, but there was also a sizable percentage who were mortally wounded in the homes of young playmates, and a few were killed in the homes of relatives.

In addition to the children killed in the home, forty-nine youngsters in this insurance experience were accidentally shot while playing on the street, in open lots, in public buildings and other places, or while hunting. Stray bullets fired from an unknown source caused a few deaths, but in most instances the wounds were self-inflicted or were caused by a gun in the hands of a young companion. In the teen-age group, a large number of

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the boys received their fatal injuries while hunting. Several others of this age group died from wounds suffered while engaged in target practice.

The insurance records indicate that guns are kept in places easily accessible to children—in bureau drawers, in desk drawers, on the kitchen shelf, or in a closet. Pistols and revolers accounted for about half the deaths in home accidents for which data are available. Rifles and shotguns, it was frequently stated, were kept for hunting purposes, but there was very little information given as to why revolvers and pistols were kept in the house. It is interesting to observe that in two instances the weapons were described as wartime souvenirs—old Army automatic pistols that belonged to the father who had fought in the first World War.

The Centigrade Thermometer

The Centigrade thermometer came into being in 1742. Newton, in 1701, had proposed a scale with the zero as the freezing point of water and the human body heat as 12°. Fahrenheit (1714) tried for the lowest temperature then attained, using a freezing mixture of ice and common salt, and he made finer gradations, taking the body temperature as 96° Fahrenheit. The constancy of the boiling point of water at constant pressure gave the second fixed point, as Halley and others had suggested. In 1742 the freezing point of water was found to be quite definite, and Anders Celsius, of Upsala (1701-1744), selected his zero and 100° as the freezing and boiling points of water respectively. The Fahrenheit scale suits weather work and still holds its own in British medicine. The Celsius or Centigrade scale is generally adopted in science. —*Med. Jour. of Australia,* July 10, 1943.

Meeting the patient's expectations

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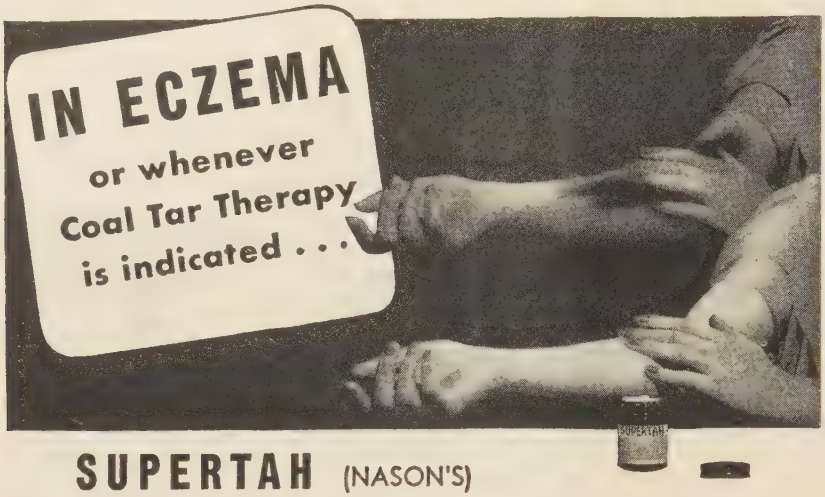

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Family Health Needs

Medical responsibility for the post-war health needs of American families was discussed at the twenty-fourth annual dinner meeting of the Planned Parenthood Federation of America held in New York, on January 24th. The dinner committee consisted of forty-four prominent New York physicians, with Dr. William C. Herrick, president of the New York Academy of Medicine as chairman. Dr. Richard N. Pierson, of New York, served as toastmaster.

Recognizing the rejection of some four million young Americans for military service because of physical defects as a symptom of the need for improved medical care, authorities in the medical profession analyzed the responsibility for the health of tomorrow's family.

Speakers included Dr. R. C. Williams, Assistant Surgeon-General in charge of medical services, U.S. Public Health Service; Lt. Col. Roy R. Grinker, medical executive, AAF Convalescent Hospital, St. Petersburg, Fla.; and Edward A. Schumann, M.D., of Philadelphia, national authority in the field of obstetrics and gynecology. Dr. Williams reported on plans of the U.S. Public Health Service for better public health care for families after the war. Experiences of the armed forces in preserving mental health and the health problems that must be met through community counselling services with the return of veterans were outlined by Colonel Grinker. Dr. Schumann, speaking as an individual and not as a representative of any group, stressed neglected phases of maternal health that must be met if tomorrow's families are to be physically and mentally fit. The highlights of these addresses were presented in a round table discussion.

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Care of the Mentally Ill in Wartime

The National Committee for Mental Hygiene recently issued a report on what state hospitals for the care and treatment of the mentally ill can do to prevent an unnecessary decline in the quality of their service in spite of wartime shortages in medical nursing and attendant personnel, of occupational therapy equipment and of surgical and other facilities. The committee made inquiries of the superintendents of twelve state hospitals in various sections of the country as to what steps were being taken to meet the emergency. The report summarized the replies received, and included suggestions for the benefit of other state institutions in the country which have an aggregate patient population of six hundred thousand. Dr. Robert Woodman, consultant on mental hospital services for the committee, prepared the report and pointed out that shortage of help was an important factor. One institution, he said, had been able to fill only sixty percent of the positions provided for in its budget, and only forty percent for nurses and attendants. It had also been necessary to employ older people, those with physical handicaps, and persons whose work records would not warrant their employment in normal times.

Several constructive suggestions were made to meet the current situation, which included the selection of the best available personnel without political preference or favoritism, better salaries and working conditions to make the positions more desirable, and the employment of various persons on a part time basis. The report emphasized the importance of patriotism as an essential factor in carrying on the work and making the best of existing conditions.

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Localization and Removal of Foreign Bodies

W. S. Hotchkiss (*Virginia Medical Monthly,* Jan. 1944) describes a method for localizing and removing opaque foreign bodies which has been used with much success in the U. S. Marine Hospital at Norfolk, Va., where there has been more than the usual number of foreign body cases. He points out that most of the material consisted of small metallic foreign bodies from broken tools and gears, which are frequently difficult to find on account of their small size. Wood splinters often fall into this category, and always when there is a trace of lead paint on the wood.

The method is described as follows: The foreign body is first visualized on the fluoroscopic screen. The skin area over the site is prepared and a ten cc. syringe of one percent novocain with two small calibre needles of sufficient length obtained. Under fluoroscopic visualization one needle is introduced into the skin at a slight angle, and infiltrating novocain ahead is brought into contact with the foreign body. The syringe is then removed, leaving the needle in place. The second needle is then applied, and the same procedure repeated from a different point. Under local anesthesia it is simple to cut down to the point of junction of the needles and remove the foreign body.

Somewhat similar methods and variations of this method have been mentioned in the literature, but Dr. Hotchkiss considers this method the simplest and most practical because of the accurate and graphic localization of the foreign body achieved, the lack of any exceptional skill needed, removal of risk of infection since no roentgenological procedure is necessary after the skin incision.

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Danielssen's disease.—Danielssen, with Boeck, worked on anesthetic leprosy, which has been named Danielssen's disease, and also Danielssen-Boeck disease. Danielssen, a Norwegian physician, was born in 1815, and died in 1894. He was a pharmacist, who later studied medicine. His interests were many other than medicine, as the theater, literature and biology.

Bannister's disease.—Angioneurotic edema has been called Bannister's disease, after H. M. Bannister (1840-1920), who first described the condition in 1894. Bannister was graduated from the National Medical School, was on the geological survey of the territories, and was a member of the editorial staff of the *Journal of the American Medical Association.*

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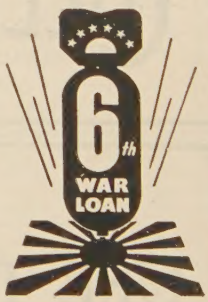

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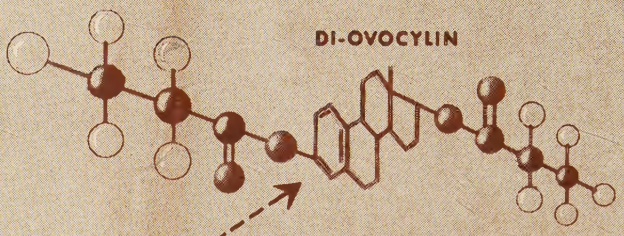

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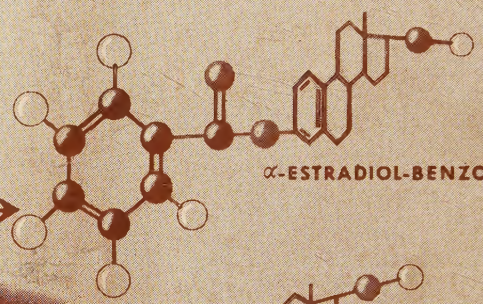

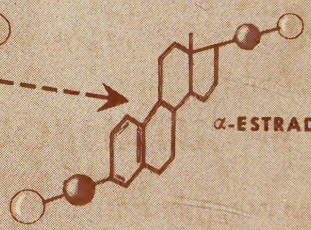

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